Telephony.

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Government and Telephones.

After nursing the matter for more than a year, Attorney General Wickersham has referred the question "Is the American Telephone & Telegraph Co. a bad trust?" to the Interstate Commerce Commission.

It will be recalled that the case came before the Department of Justice through complaints filed by Independent companies alleging that the Bell had violated the Sherman anti-trust law. An investigation by the department followed in which evidence was collected in various parts of the country. Now, Attorney General Wickersham says that, instead of a prosecution in the courts, the situation demands an investigation by the Interstate Commerce Commission looking to government regulation of the telephone business of the country.

Mr. Wickersham leaves office in March. Before going, doubtless, he desires to "clean up" his docket. Therefore, he bundles up all the evidence and data collected in the last year, hangs it on the door-knob of the Interstate Commerce Commission, rings the door bell and then quietly "ducks." To use another slang expression, he has "passed the buck."

The commission has manifested its willingness to tackle the question, and it is expected that it will soon begin an inquiry which will last at least another year. There seems to be a well-defined belief that the commission is not clothed with the necessary authority to regulate and control telephone and telegraph companies as completely as it regulates and controls railroads, and it will probably be necessary to enact legislation to cover this point.

All in all, this year promises to be an important one in telephone history. Any consideration of the situation, however, should bear in mind that Woodrow Wilson is to sit in the White House after March 4, and that he has frequently indorsed the principle of competition in no uncertain terms.

The National Conventions.

On other pages of this issue will be found a report of the meeting of the United Independent Telephone Association of America, which was organized at Pittsburgh last week. The new association is planning to hold a national convention in the spring, probably in May, and at Washington, D. C.

The National Independent Telephone Association will hold its annual convention at Chicago, February 18, 19 and 20.

Serious question has been raised regarding the advisability of two national associations representing the Independent telephone interests, the point being made that more effective work could be done by one energetic and comprehensive organization on guard to conserve the interest of locally owned Independent operating telephone companies. The by-laws of such a national association should be broad enough to include all locally-owned Independent plants, and provide for service to such companies on all national questions. Matters purely local, affecting companies in only one state, could and should be handled by the state associations, aided and advised, if desired, by the national body.

Leaders in the field who argue thus say that Independents must recognize changing conditions, and that the problems of ten years ago do not exist today. When Independent telephony started, eighteen years ago, there was such a public demand for telephone service that neither Bell nor Independents could satisfy it. Then there were fewer than 300,000 telephones in the United States.

Now there are more than 9,000,000 in service. The industry has grown to be the fourth greatest in the country, and should take its proper place. The total investment in the telephone business is considerably more than a billion dollars, and as this includes trust funds, the savings of widows and orphans and the capital of people in every walk in life these funds so invested in telephone securities should be safeguarded.

There is need today of men in the telephone game who are big and broad to put the industry on a business basis—men who will conserve and construct, not destroy. These men should be imbued with the idea that the telephone is not a natural monopoly, that universal service is a will-o'-the-wisp. The telephone is a local issue. An operating exchange in any city, town or village should be owned, in most part, by men in that particular city, town or village. No one, in good

faith, can deny the proposition that when either Independent or Bell operating company ceases to give good service at fair rates, competition will and should obtain.

TELEPHONY believes that every locally owned Independent operating telephone company of any size should be represented at the convention at Chicago in February. It should be the duty of these men to help finance and assist an association along the lines that will do the greatest good to the greatest number. The men who formed the Pittsburgh association should be present and join in this movement.

The by-laws of both associations are very similar. There is really little difference of opinion, and the best interests of the industry demand a sane working out of the Independent telephone problems under one broad organization. There are many questions of national character which should be discussed and explained, such matters as commission control, compulsory physical connection, proper financing, construction and traffic problems—in fact, all questions that relate to the successful operation of local and long-distance telephone systems.

With both associations represented at the Chicago convention, working together for the common good, better results will be obtained. The old motto of ante-bellum days applies—"In union there is strength."

Impossibilities the Failures of Lazy Men

By HERBERT KAUFMAN

Impossibilities are merely the half-hearted efforts of quitters. The man who won't go through to the finish has finished at the start. If he hasn't pluck enough to hang on, he must hang back. We can't afford to regulate the pace of progress to accommodate the laggard.

The lazy man has always failed in every spot and in everything. He's a weed in the way of a producer. He absorbs more than he earns. He checks the growth of well-planted endeavor.

He's a sterile seed. The winds of fortune may drift him successively to a dozen rich soils, but no matter where he lands, he's useless.

Even when he does meet opportunity he doesn't know it. He can't tell the difference between good luck and a case of measles.

The steady, ready worker never complains. He's too busy trying to better his condition. When a man is doing his level best he always finds life on the level.

When you meet a howler who blames his environment, his generation, his fellows, his country, you find a man who has failed in himself. Not geography nor time nor environment can hold down a fighter.

The right type of man will raise a grove of fig trees in a desert.

Failure isn't a disease of locality—it's a personal habit.

Anybody can get a steady living out of steady effort. The same clock that ticks off twenty-four hours for one man can't cheat his neighbor. The same laws of right and wrong, the same privilege to do and dare, are open to both.

All through the continent, old counties are changing their aspects. The stock breeder who wasted fourteen acres of prairie upon one steer must hand over the land to a newcomer who can make it support fourteen humans and the steer.

Prairie sections which once went begging for buyers at dollar an acre are now bearing enough cotton and cane and truck and fruit to raise their value a hundred fold.

The same soil was there all the while. It was always worth a hundred times as much as its selling price, but not to the owner who couldn't find it out.

The man who looks hard enough will find enough to repay him. Only the worker lasts. Carelessness and indifference and neglect are not timbers for the builder.

There are no free passes over the modern road. Fortune has an interstate commerce law of her own—she won't dead-head any one.

Everybody who ever did anything, anywhere, had to find the grindstone and run himself against it until it developed an edge that would cut something.

Half of greatness is grit. When intelligence is backed up by the determination not to back down, the only thing under the sun that is impossible is something that can't be imagined.

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Wickersham Asks Commission to Investigate Telephones

Attorney General of the United States Transmits to Interstate Commerce Commission Entire Question of National Telephone and Telegraph Operations—Declares that Regulation, not Prosecution Under Sherman Act, is Needed—Commission Accepts Task

At the conclusion of an exhaustive investigation by the Department of Justice of telephone conditions in this country, in the course of which a mass of testimony has been taken and data of every sort bearing upon the situation has been gathered, George W. Wickersham, attorney general of the United States, has transmitted the whole problem to the Interstate Commerce Commission for action.

In his letter to the commission Mr. Wickersham states that the investigation was made with intent to ascertain if violations of the Sherman anti-trust law have occurred which would warrant the Department of Justice in proceeding against the American Telephone & Telegraph Co. under that act. He recites the charges made against the Bell system, of buying competing companies, cutting off of long distance connections, increasing of rates, etc., and declares that "many of these questions cannot be appropriately dealt with by the law department of the government, but should be made the subject of regulation after a careful investigation of the whole subject by your honorable body."

He says that he believes the commission has power to make a "comprehensive and thorough investigation of the matter," adding, however, that it may be necessary for that body to suggest additional legislation to Congress. He refers to the increasing number of state commissions, but declares that state regulation "cannot be a satisfactory method of ultimate solution of the questions arising out of telephone operation."

"No comprehensive investigation into the organization, management and conduct of telephone companies has, so far as I am aware, ever been had by governmental agency," says Mr. Wickersham in conclusion. "The whole problem of relation of government to the transmission of intelligence by telephone and telegraph is one of such far-reaching importance, and so affects the welfare of the entire community, that it appears to me to be a subject which should be thoroughly studied from the standpoint of the public, in order that a governmental policy with respect to the telephone and telegraph business may be intelligently formulated and adopted."

Shortly after receiving the attorney general's communication, Chairman Lane, of the commission, announced that the work would be energetically undertaken, and at once. Preliminary work has already been begun and a formal order instituting the investigation will probably be issued by the commission within a few weeks. Other than stating that the commission accepted the assignment of the case to it, Chairman Lane declined to discuss the matter with TELEPHONY's representative.

The full text of the attorney general's letter to the commission follows:

"This department has been engaged for some time past in an investigation of certain complaints made on the part of persons interested in Independent telephone companies against the American Telephone & Telegraph Co. There are said to be some 20,000 Independent telephone companies representing investments aggregating many millions of dollars, which together operate somewhat more than 4,000,000 telephones. No one of these companies represents capital or business comparable in size with that of the American company or any of its principal subsidiary companies.

"The American Telephone & Telegraph Co., either directly, or through subsidiary companies whose stock it owns, operates what is known generally as the Bell Telephone System, which reaches upwards of 70,000 places, distributed among practically all the states of the Union, having some 4,500,000 telephones in use, and operating the principal long distance lines between the states. It has an invested capital of a book value of nearly six hundred million dollars. It also is the owner of a large block of stock of the Western Union Telegraph Co., through which it practically controls the operations of the telegraph and cable lines of that corporation.

"The policy of the company is set forth in the annual report of its directors to the stockholders, for the year ending December 31, 1910, as follows:

'It is believed that the telephone system should be universal, interdependent and intercommunicating, affording opportunity for any subscriber of any exchange to communicate with any other subscriber of any other exchange within the limits of speaking distance, giving to every subscriber every possible additional facility for *annihilating time, or distance by use of electrical transmission of intelligence or personal communication.* It is believed that some sort of a connection with the telephone system should be within reach of all. It is believed further, that this idea of universality can be broadened and applied to a *universal wire system* for the *electrical transmission of intelligence (written or personal communication)*, from every one in every place to every one in every other place, a system as universal and as extensive as the highway system of the country which extends from every man's door to every other man's door.

It is not believed that this can be accomplished by separately controlled or distinct systems nor that there can be competition in the accepted sense of competition.

It is believed that all this can be accomplished to the reasonable satisfaction of the public with its acquiescence, under such control and regulation as will afford the public much better service at less cost than any competition or government-owned monopoly could permanently afford and at the same time be self-sustaining.'

'With the extension of the speaking limits of the telephone over connecting lines came also the necessity for the extension of the territorial limits of the exchange systems, the necessity of standardization, uniformity of apparatus and operating methods, and an effective common control over all. The necessity for system was the beginning of the Bell system. The combination of the separate exchanges and lines into larger aggregations or organizations followed. It was necessary to have more effective organization with more effective administration and management, and with resources sufficient to make the changes which experiment and experience had found necessary.

It is impossible to define the territorial limitations of a telephone system because from every exchange center communication is wanted up to the talking limits in every direction.

This process of combination will continue until all telephone exchanges and lines will be merged either into one company owning and operating the whole system, or until a number of companies with territories determined by political business or geographical conditions, each performing all functions pertaining to local management and operation, will be closely associated under the control of one central organization exercising all the functions of centralized general administration. But, whatever may be the form of the operating organization, there is bound to be for legal purposes and the holding of franchises, some sort of subordinate state organization which will bring the business and property in each locality under the jurisdiction of the state in which it is situated and operated.

The American Telephone & Telegraph Co., which is the owner of all or part of each company forming the Bell system is not simply a holding company. It is not a combination that has eliminated competition between the companies controlled by it. There can be no rivalry or competition between local exchanges in adjacent territory.

Those desiring the service of exchanges in adjacent territory in addition to their own can get it much better and cheaper through their local exchange. To give direct individual wires from one exchange territory into another would be impracitcal from the multiplication of lines, and prohibitive on account of cost.

The American Telephone & Telegraph Co. is a centralized general administration for all the companies. It does the financing for the extension of the business. It furnishes the engineering, operating and other experts. It maintains a productive and protective organization so far as patents are concerned. It defends all the companies against all infringements. It undertakes to bring about improvements by working out the ideas and suggestions of others, both in and out of the business. Its agents keep each company fully informed of all that is going on in the field. It avoids all duplication of efforts, of experiments, of trial of new methods, apparatus, etc. It looks after the public relations of the companies. In other words, it performs all that service which is common to all, leaving to the local companies the local management.

The organization is not unlike that of the United States, each local company occupying its own territory and performing all local functions, the American Telephone & Telegraph Co. binding them all together with its long-distance lines and looking after all the relations between the local companies and between local companies and other companies. To have developed the telephone industry to its present state of efficiency would have been beyond the ability of any one of the local companies.

All Independent systems which have been started have more or less followed the same lines, but within restricted areas, whether built by one company or interest, or by several. First, the local exchange, then the toll line to outlying points, and then the long-distance line connecting with other Independent exchanges, tieing them together to form a system affording facilities for communication between the subscribers of one exchange and the subscribers of any other, but limited in scope, and without the community of interest necessary to a common system.

In other words we have the Bell system on the one side, developed on the lines of a universal, intercommunicating and interdependent service, we have the opposition on the other side, segregated exchanges or limited systems without universality, incomplete and inefficient, neither interdependent nor intercommunicating, except to a limited extent.'

"In carrying out the policy so frankly outlined in this statement, representatives of many of the Independent companies have complained that the American company has not contented itself with the normal extension of its system, but that it has purchased competing lines in such manner and in such circumstances as to destroy competition, which would otherwise have furnished the public with better facilities at lower rates than have since obtained, and that it has refused, either directly or through competitive and originally Independent lines acquired by it, to make connections between local lines not owned or controlled by it and its own long distance lines, and has terminated contracts and arrangements for the interchange of business between the lines so acquired, and lines of companies not owned or controlled by the American companies.

"Complaints are also made that in cases where the American companies have assumed to make such connections and to interchange business with Independent companies, they have done so in such manner as, in effect, to prevent a satisfactory exchange of faciliteis of communication between the American lines and those not controlled by that company, thereby intending to discourage the patrons of the Independent companies and drive them to the American companies.

"Complaints are also made that the American company has discriminated between the lines of the Western Union Telegraph Co., in whose stock it owns a large interest as above mentioned, and the lines of the Postal Telegraph Co., in which it is not interested, in cases where subscribers to its telephone lines request to be put in communication with the Postal company for the purpose of giving it messages to be transmitted by telegraph.

"It is also complained that the rates maintained by the American companies for local and long distance telephone service are unduly high in places and between communities where there is no competition; that wherever Independent companies have been established, rates have been greatly reduced, and that in every instance when the American company has secured control of Independent companies it has immediately increased the rates to an undue extent.

"Representatives of Independent companies contend that the American company should receive and interchange business with them on a basis analogous to that on which transportation by railroad is conducted, while the American company maintains that such interchange is not compelled by statute and is impracticable.

"Many of these questions, it seems to me, cannot be appropriately dealt with by the law department of the government, but should be made the subject of regulation after a careful investigation of the whole subject by your honorable body. The powers vested in you by statute appear to me to be ample to enable you to make a comprehensive and thorough investigation of the matter. It may be that as a result of such investigation, you will conclude that additional legislation should be suggested to Congress.

"Quite a number of the states have enacted laws vesting in public utilities commissions or similar bodies, jurisdiction, which has been executed in some instances, with respect to the acquisition of telephone lines of one company by another, and with respect to the interchange of business and facilities between telegraph and telephone lines. State regulation, however, cannot be a satisfactory method of ultimate solution of the questions arising out of telephone operation. The value of a telephone service depends largely upon the facility of connecting every individual telephone user with any point upon any telephone line in the United States; but this should be attained under conditions which secure to the public the maximum of convenience upon the most reasonable terms consistent with a fair return upon the investment, and under suitable supervision and control by your honorable body.

"The interstate commerce act, as at present in force, makes telegraph, telephone and cable companies engaged in sending messages from one state, territory or district of the United States to any other state, territory or district of the United States, or to any foreign country, common carriers within the meaning and purpose of the act. It requires all charges for service rendered in the transmission of messages by telegraph, telephone or cable in interstate or foreign commerce or in connection therewith, to be just and reasonable, and makes it unlawful for any common carrier subject to the provisions of the act, to make or give any undue or unreasonable preference or advantage to any particular person, etc., or locality, or to any particular description of traffic in any respect whatsoever, or to subject any particular person, company, etc., or locality, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.

"The sixth section of the act, which requires common carriers subject to its provisions to file with the commission and print and keep open to public inspection schedules of rates, fares and charges, is probably not broad enough to extend to telegraph and telephone companies, but the fifteenth section confers upon the commission ample power of investigation on its own initiative and enacts that if the commission shall be of opinion

'that any individual or joint rates or charges whatsoever demanded, charged, or collected by any common carrier or carriers subject to the provisions of this act for the transportation of persons or property or for the transmission of messages by telegraph or telephone as defined in the first section of this act, or that any individual or joint classification, regulations or practices whatsoever of such

carrier or carriers subject to the provisions of this act are unjust or unreasonable or unjustly discriminatory, or unduly preferential or prejudicial, or otherwise in violation of any of the provisions of this act, the commission is hereby authorized and empowered to determine and prescribe what will be the just and reasonable individual or joint rate or rates, charge or charges, to be thereafter observed in such case as the maximum to be charged, and what individual or joint classification, regulation, or practice is just, fair, and reasonable to be thereafter followed, and to make an order that the carrier or carriers shall cease and desist from such violation to the extent to which the commission finds the same to exist, and shall not thereafter publish, demand, or collect any rate or charge for such transportation or transmission in excess of the maximum rate or charge so prescribed, and shall adopt the classification and shall conform to and observe the regulation or practice so prescribed.'

"Moreover, by the twentieth section, the commission is authorized not only to require annual reports from the common carriers subject to the act, but also, by general or special orders, to require them to file monthly reports of earnings and expenses 'and to file periodical or special, or both periodical and special, reports concerning any matters about which the commission is authorized or required by this or any other law to inquire or to keep itself informed or which it is required to enforce.'

"Under the provisions of the statute referred to, the commission is, therefore, fully empowered to make the most thorough investigation into the rates and practices of the telephone companies to determine what are reasonable maximum rates to be charged for communication from one state to another, and the practice to be observed in all of the dealings of the telephone companies with the public and with other companies.

"No comprehensive investigation into the organization, management and conduct of telephone companies has, so far as I am aware, ever been had by governmental agency. The investigation of this department has dealt only with certain suggested violations of the Sherman anti-trust act, but the whole problem of the relation of government to the transmission of intelligence by telephone and telegraph is one of such far-reaching importance and so affects the welfare of the entire community, that it appears to me to be a subject which should be thoroughly studied from the standpoint of the public, in order that a governmental policy with respect to the telephone and telegraph business may be intelligently formulated and adopted.

"The Interstate Commerce Commission is clothed with the powers above referred to, and the subject is one affecting such general public interests that I venture to suggest that you undertake this work. If these suggestions commend themselves to your honorable body, I beg to add that all of the information which has been collected in this department bearing upon the subject, will be cheerfully put at your disposal."

There are seven members of the Interstate Commerce Commission, who will have this matter in hand. Franklin K. Lane is chairman, the other members being Charles A. Prouty, Judson C. Clements, Edgar E. Clark, James S. Harlan, Charles C. McChord and Balthasar H. Meyer. Mr. Clark's term has expired, but he was re-appointed by the president. This has not yet been confirmed by Congress. John H. Marble is secretary of the commission; G. B. McGinty, assistant secretary; William H. Connolly, chief clerk; J. M. Jones, chief of bureau of tariffs; Charles A. Lutz, chief examiner of accounts; and W. J. Meyers, statistician.

Bell Officials Pleased With Outcome.

Among officials of the American Telephone & Telegraph Co., the sentiment regarding the action of Attorney General Wickersham in turning complaints against that corporation over to the Interstate Commerce Commission for general investigations is in some respects one of exultation, says Financial America (New York). In the past year or two, during which there have been many conferences between representatives of the government and of the company regarding the interstate business in both the telephone and telegraph departments and the buying up of Independent concerns, the corporation officials have steadfastly insisted, in any public statement, that there was no basis for a federal dissolution suit. They now feel that the action of Mr. Wickersham is a confirmation of their assertion that the policy of the corporation has been one of frankness toward the government and willingness to comply with the statutes.

Theodore N. Vail, president of the American Telephone & Telegraph Co., who is at his farm in Vermont was notified by telegraph late Monday by associates in this city of Mr. Wickersham's decision. He indicated he would have no public comment to make on the matter at the present beyond the fact that he had felt assured from the beginning the government would find that no necessity existed for instituting a prosecution of the company as a combination in restraint of trade. An official of the company said:

"In many ways, Mr. Wickersham's decision is a remarkable testimonial to the administration of the company's affairs under Mr. Vail. When the size of the corporation is taken into consideration, and the ramifications of its operations, the meaning of that decision is realized. As for the Interstate Commerce Commission investigation, that is a matter that will occupy, I presume, at least two years. The American Telephone & Telegraph Co. officials will cooperate, of course, as fully as possible with the commission."

It was considered also by officials of the American company that if the commission actually undertakes an investigation, its probe of telegraph service must include the Postal as well. There was no sentiment apparent that the forthcoming change in the national administration would affect the status of the request which Mr. Wickersham has made to the Interstate Commerce Commission that it ordered an investigation.

U. N. Bethell, senior vice-president of the American Telephone & Telegraph Co., when asked for his opinion with regard to the matter, said:

"We are, of course, gratified to know that after carefully investigating the matter the attorney general has concluded to refer it to the Interstate Commerce Commission. Our policy in dealing with the commission will be to give it freely and fully all information desired as it has been in dealing with the attorney general, and with public service commissions and other governing bodies."

Vice-President Sunny's Views.

"In making his decision the attorney general shows that he was unable to find where the American Telephone & Telegraph Co. has violated in any particular the Sherman anti-trust act," said vice-President B. E. Sunny, in an interview given out this week.

"The largest consolidation in years in the West was made four months ago in Detroit, when five different companies were combined with the system. This was done with the approval of the attorney general and the Railway Commission, which has jurisdiction in such cases in the state of Michigan.

"The question that must be worked out is whether the enterprise shall be governed by federal, state or city authorities. We have no choice in the selection. Federal jurisdiction hardly would be possible on account of state rights, but either the state or the Interstate Commerce Commission probably could act."

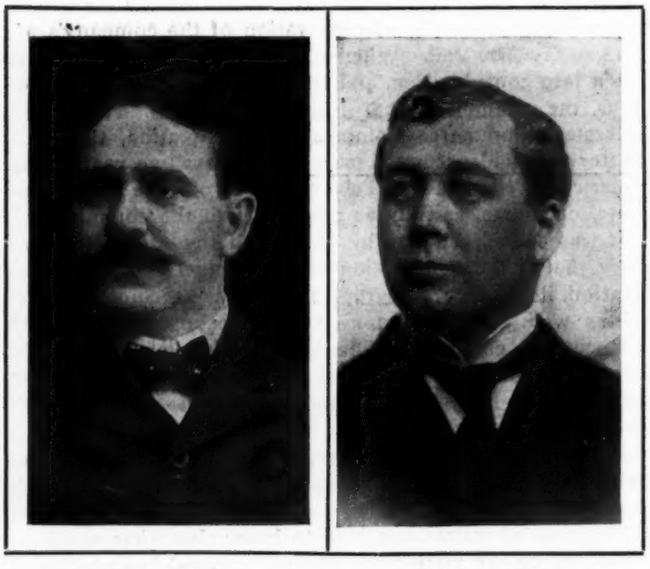
How New United Independent Association Was Formed

Report of Meeting at Pittsburgh Last Week—Names of Men and Companies Launching Organization—Complete By-Laws and Requirements for Membership—What the Association Proposes to Do—Election of Officers and Directors for First Year

Inasmuch as the meeting at which the United Independent Telephone Association of America was organized had scarcely begun when TELEPHONY went to press last week, a full report of the initial convention is given herewith. About 100 were present when J. Walter Barnes, of Fairmont, West Va., called the meeting to order in the assembly room at Hotel Antler, Pittsburgh, January 16. Independent telephone companies in five states were represented—Pennsylvania, New York, New Jersey, West Virginia and Ohio. The annual meeting of the Western Pennsylvania Telephone Association had just adjourned and many of the delegates remained to participate in the proceedings of the new organization.

"I think you are all advised of the purpose of this meeting," said Chairman Barnes, after rapping for order, "and as it is necessary to have a temporary organization, a motion is in order."

F. H. Mott, of New York, moved that Mr. Barnes be made temporary chairman, which was carried. H. E. Webb, of Pittsburgh, was elected temporary secretary.



J. G. Splane. B. G. Hubbell.

B. G. Hubbell, of Buffalo, took the floor and stated that it was the purpose of the meeting to form a new association which would represent and be composed only of men identified with Independent companies having no affiliations with other telephone interests in any way. In order to specify the qualifications for membership in the association, Mr. Hubbell offered the following resolution:

"This association shall be composed of members who represent telephone companies independent of, and not owned or controlled by, the American Telephone & Telegraph Co., directly or indirectly; and no person or company shall be eligible to membership in this association who represents a telephone company in which the A. T. & T. Co., or any of its associated or allied companies control or hold a substantial financial interest; and in the event that any such interest or control shall be acquired by the A. T. & T. Co., or any of its associated or allied companies, the membership so affected shall immediately cease."

T. J. Shufflin, of Butler, Pa., moved that the resolution be adopted. William S. Paca, of Oil City, Pa., seconded the motion. In speaking to the resolution, Mr. Hubbell said the organization of a new association was not intended to conflict with other associations, and did not mean a warfare with other Independent organizations, but that it was created to promote the interests of Independent telephone companies in a sincere and broad-minded way.

"We want men in this association," said he, "who can sit down at a table with their colleagues, place their feet squarely under the table and look each other in the eye. We want the qualifications of membership in this association to be unequivocal, and to have it thoroughly understood that when a member ceases to fill those qualifications and becomes ineligible his membership automatically ceases."

Charles West expressed similar sentiments, declaring that if circumstances should ensue whereby a company was taken over by interests antagonistic to Independent telephony, such company should no longer be included in the United Independent Telephone Association of America.

On motion, Mr. Hubbell's resolution was adopted as read.

Mr. Hubbell then moved that the chair appoint a committee on credentials to pass upon applications for membership and register those who qualify as eligible. Chairman Barnes appointed the following committee: B. G. Hubbell, Buffalo; T. J. Shufflin, Butler, Pa.; Chas. West, Philadelphia; J. K. Brown, Brookville, Pa.; and C. F. Bender, Pittsburgh.

Mr. West moved that the association adopt the by-laws, copies of which had been furnished the members, including Mr. Hubbell's amendment embodied in the above resolution. The motion was carried, and, the new association was launched with the following by-laws:

ARTICLE I.

NAME.

The name of this association shall be the "United Independent Telephone Association of America."

ARTICLE II.

OBJECTS.

Section 1. The objects of this association shall be to foster and protect Independent telephone interests throughout the United States.

Section 2. The establishment and maintenance of a bureau of information for the instruction, information and benefit of its members.

ARTICLE III.

MEMBERSHIP.

Any Independently owned telephone company in the United States, upon written application to the executive board, may become a member of this association after having received the board's approval.

ARTICLE IV.

DELEGATES AND FEES.

Members shall be entitled to one delegate for each 5,000 units or a majority fraction thereof, (except that each member shall be entitled to one delegate), and may be represented at the meeting by as many delegates as are in good standing.

Each telephone and each mile of circuit, or a majority fraction thereof, shall be accepted as one unit in determining the number of delegates members are entitled to.

No initiation fee shall be charged, but for each delegate present and voting at the regular annual meeting, the member represented by such delegate shall pay a fee of $5.

At subsequent meetings during the year each member shall be entitled to as many delegates only as were in good standing at the last previous annual meeting.

Article V.

OFFICERS AND MEETINGS.

Section 1. The officers of this association shall be a president, two vice-presidents, secretary-treasurer and an executive board of fifteen, one of whom shall be the president.

They shall be elected by a majority vote of the delegates present and in good standing at the annual meeting, which shall be held during the month of January in each year, and shall hold office until their successors are elected and qualified.

They shall be governed in their acts by vote of the majority of the members before whom matters of importance (outside of routine business) shall be brought.

Section 2. The president shall preside at all meetings, but shall not vote except in case of a tie. He shall be ex-officio chairman of the executive board and shall have power to appoint all committees. He shall countersign all checks and vouchers drawn by the secretary-treasurer. He shall have power to call a meeting of the executive board at any time and for any cause.

Section 3. In event of the absence, removal or death of the president the vice-presidents shall preside and exercise the duties of the office in their order, except that they shall not have power to repeal any of the acts of the president, unless ordered to do so by a majority vote of the members present at any annual meeting or a meeting of the executive board.

Section 4. The secretary-treasurer shall keep the minutes of all meetings of the association and the executive board. He shall take charge of the finances of the association, shall keep an accurate account of all receipts and disbursements and shall make a report to the annual meetings of the association and to the executive board whenever called upon to do so. He shall, under the direction of the executive board, conduct a bureau of information for the benefit of the members, collecting data and information relating to the welfare and promotion of the Independent telephone business throughout the United States. He shall draw and sign all checks and vouchers. He shall be the only salaried official of this association and shall receive such compensation as may be fixed and determined by the executive board.

Section 5. The executive board shall have such powers, duties and authority as may be vested in it at any meeting of the association and between meetings of the association have full power and authority to transact any and all business of the association. They shall select a bank for the deposit of the funds of the association and shall determine the amount of bond to be given by the secretary-treasurer, cost of which shall be paid by the association. They shall, each year, by a two-thirds vote, elect a committee of three auditors, who shall audit the books of the secretary-treasurer at least one week prior to the annual meeting and shall report to that meeting. They shall meet at the call of the president, shall act as his advisory committee, shall have the power to form legislation and it shall be their duty to report to the president all movements in the legislative, business and political fields that may be of interest to the association.

Article VI.

IN GENERAL.

Section 1. It shall be the duty of the members of this association to keep in touch with the secretary at all itmes, keeping him fully informed as to all movements in their territory which would be of general interest to the association, and to furnish him promptly with all information, at his request, for the benefit and good of the association.

Section 2. Any officer may be removed by a three-fifths vote of all present at any regular meeting of the association. A member who is suspected of conduct injurious to the interests of the Independents, may be so charged by petition to the president, signed by 10 per cent. of the membership. The president shall then call a meeting of the executive board, before which the defendant, having been notified of said intention 10 days previous, shall appear. After examination before the board, a ballot shall be taken and if three-fifths of the board are convinced of his guilt, he shall be suspended from membership until the next annual meeting. Should a majority vote at the annual meeting ratify the action of the board, he shall be suspended from membership.

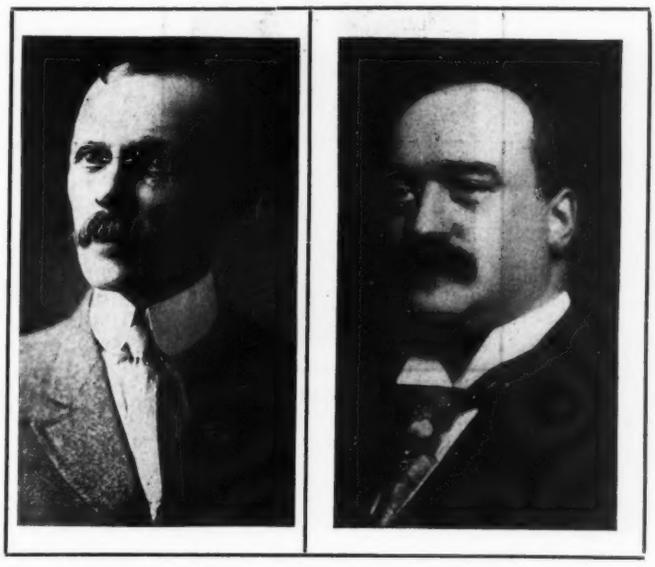
Section 3. Roberts' Rules of Order shall be the method of business procedure at all meetings.

Article VII.

AMENDMENTS.

These by-laws may be amended at any regular or special meeting of the association by a two-thirds vote of the members present, notice of such proposed amendment having been given in the call for the meeting.

On motion of Mr. West, the chair selected the following



John H. Wright. Charles West.

to act as a nominating committee to choose officers and a board of directors:

J. G. Splane, Pittsburgh; E. J. Moore, Point Marion, Pa.; J. A. Haven, Brookville, Pa.; John H. Wright, Jamestown, N. Y.; G. E. Crist, Blairsville, Pa.

While the credentials and nominating committees were at work the meeting took a recess for 30 minutes.

On re-assembling, Chairman Barnes called for a report from the credentials committee, which presented the following list of fifty-two accepted members of the new association, being the companies and also the individuals who spoke for them:

Union Telephone Co., Pittsburgh, J. A. Short.

Independent Telephone Const. Co., California, Pa., H. L. Lamb.

Meadville (Pa.) Telephone Co., V. A. Hatch.

Crawford Mutual Telephone Co., Conneautville, Pa., W. R. Murphy.

East Randolph Telephone Co., East Randolph, N. Y., J. H. Wright.

Home Telephone Co., Jamestown, N. Y., F. H. Mott.

Western Central Telephone Co., Fairmont, W. Va., W. K. Barnes.

Am. Union Telephone Co., Shamokin, Pa., J. P. Hilfenstein.

Interstate Telephone Co., Philadelphia, Chas. West.

United Telephone & Telegraph Co., Shamokin, Pa., W. L. Helfenstein.

West Virginia Western Telephone Co., Parkersburg, W. Va., W. I. Steer.

Woodsfield Telephone Co., Woodsfield, Ohio, H. E. Webb.

Union Telephone Co., Fairview, Ohio, J. O. Henry.

Berwick Telephone Co., Berwick, Pa., C. D. Thompson.

Bedford County Telephone Co., Bedford, Pa., W. H. Weller.

Beaver County Telephone Co., Rochester, Pa., H. M. Camp.

Belmont Telephone Co., Bridgeport, O., A. H. Doudna.

Bughby Telephone Co., Weston, W. Va., G. C. Shields.

Blairsville Telephone Co., Blairsville, Pa., G. E. Crist.

W. L. Helfenstein.

Bordentown Telephone Co., Bordentown, N. J., S. W. Harper.

Atlantic Coast Telephone Co., Atlantic City, N. J., C. A. Gabig.

Farmers Telephone Co., Marion, Pa., E. J. Moore.

Ashville & Panama Telephone & Telegraph Co., Jamestown, N. Y., A. H. Appleby.

Brookville & Sommerville Telephone Co., Brookville, Pa., J. A. Haven.

Consolidated Telephone Co., of Pa., Philadelphia, F. M. Weaver.

Albion Telephone Co., Albion, O., S. D. Sawdey.

Union Telephone Co., Erie, Pa., W. H. Wilson.

Paterson Telephone Co., Paterson, N. J., W. C. Handlan.

P. & W. Telephone Co., Pittsburgh, Pa., Thos. G. Davis.

Pittsburgh & Allegheny Telephone Co., Pittsburgh, Pa., J. G. Splane.

Peoples Telephone Co., Butler, Pa., T. J. Shufflin.

Petroleum Telephone Co., Oil City, Pa., W. S. Paca.

North Collins Telephone Co., Buffalo, N. Y., F. J. Goodman.

National Telephone Co. of West Virginia, Wheeling, West Virginia, H. P. Williams.

National Telephone Co. of Pennsylvania, Washington, Pa., L. H. Bowers.

National Telephone Co. of Monongahela Co., Morgantown, Pa., Jas. Knight.

National Telephone Co. of Ohio, Steubenville, Ohio, G. A. Gundring.

Mutual Telephone Co., Erie, Pa., J. Z. Miller.

Marietta Telephone Co., Marietta, Ohio, B. L. Bullman.

Keystone Telephone Co., Philadelphia, Pa., J. F. Stockwell.

Johnstown Telephone Co., Johnstown, Pa., E. D. Schade.

Huntington & Clearfield Telephone Co., Pittsburgh, Pa., G. W. Aamby.

Honesdale Telephone Co., Honesdale, Pa., H. B. Hoffman.

Hanover Telephone Co., Hanover, N. Y., B. L. Moore.

Flushing Telephone Co., Flushing, Ohio, C. D. Conrow.

Federal Telephone & Telegraph Co., Buffalo, N. Y., B. G. Hubbell.

Elizabeth Telephone Co., Elizabeth, N. J., E. W. Hatfield.

Consolidated Telephone Co., Fairmont, W. Va., J. W. Barnes.

Capital City Telephone Co., Alexander, Va., W. M. Stonebraker.

Commercial Union Telephone Co, Ridgway, Pa., G. W. Herrick.

Charleroi Telephone Co., Charleroi, Pa., C. H. Cheshire.

Chartiers Telephone Co., Pittsburgh, Pa., L. Muhlheizler.

On motion of Mr. Hubbell, the list as given was adopted by the association as the permanent roll of the convention. Mr. Hubbell also called attention to the fact that, under the by-laws, a member representing 5,000 or 10,000 telephones would have but one vote—the same as a member representing 100 telephones—provided the larger company had only one delegate present. In other words one delegate had only one vote. Under the by-laws, as adopted, however, companies are entitled to one delegate for each 5,000 units.

The committee on nominations then offered the following report: President, J. Walter Barnes, Fairmont, W. Va.; vice-presidents, E. D. Schade, Johnstown, Pa., and John H. Wright, Jamestown, N. Y.; secretary, H. E. Bradley, Philadelphia; treasurer, T. J. Shufflin, Butler, Pa.; directors, B. G. Hubbell, Buffalo, N. Y.; John H. Wright, Jamestown, N. Y.; J. A. Haven, Brookville, Pa.; W. J. Uhl, Logansport, Ind., C. H. Wilson, Philadelphia; E. D. Schade, Johnstown, Pa.; B. L. Bullman, Marietta, O.; Chas. West, Philadelphia; E. J. Moore, Point Marion, Pa.; G. E. Crist, Blairsville, Pa.; Wm. S. Paca, Oil City, Pa.; W. H. Wilson, Erie, Pa.; K. B. Schotte, Kittanning, Pa.; J. Walter Barnes, Fairmont, W. Va.; J. G. Splane, Pittsburgh.

On motion of W. C. Handlan the report was adopted, and the officers named declared elected for the ensuing year.

As the first president of the new association, Mr. Barnes made a brief address in which he said: "I feel that no man was ever so honored as I have been in being elected president of two telephone associations in two days. I assure you that I appreciate this honor and I promise that my voice and influence and efforts will always be where my heart is—that is with the Independent telephone movement. The people of the East do not believe, as the people of the West, that a strong aggressive Independent organization is not needed. It is needed and we are going to have it. A chain cannot be stronger than its weakest link, and it is our duty to see that all our links are strengthened to withstand the onslaughts of the enemy. Our motto should be 'Each for all, and all for each.' In ancient days Rome was noted for its clean streets and the question was asked what was the cause of it. The answer was that every citizen saw to it that his own individual part of the street was swept clean, and thus the whole city was looked after

properly. This is our duty. Such a policy will make this organization a splendid success. Gentlemen, I again thank you." (Applause.)

J. G. Splane moved that the association adopt the Western Pennsylvania Telephone Association News as the official organ. F. H. Mott, of Jamestown, N. Y. moved to lay that motion on the table, which was done by a rising vote. Mr. Hubbell moved that the matter be referred to the board of directors, which was done after some debate. The question of holding the next meeting of the association in Washington, D. C. some time in May, was brought up by Mr. Hubbell, who said that such a gathering of Independent telephone men at the national capital would have a good effect on the government officials charged with enforcing the laws against monopoly. After considerable discussion Mr. Hubbell withdrew his motion and the matter was left to the board of directors.

F. H. Mott, who, as assistant attorney general of the state of New York, had a great deal to do with checking the telephone monopolization of the Empire state, was called upon and made an interesting talk on the situation. He gave Messrs. Hubbell and Wright credit for effective work in preserving the Independent telephone industry in New York, and declared that their intelligent work and zeal had greatly benefited the movement throughout the country. Mr. Mott said he believed President-Elect Wilson will carry out his pledges regarding competition and insuring free industry, but the speaker urged the Independents to be on their guard and protect their own interests. He declared that municipal ownership will come if competition falls before legalized monopoly.

T. J. Shufflin offered a motion that all Independent manufacturers be allowed to become members of the association, but without voting privileges. It was decided to have the credentials committee pass upon manufacturers' and supply dealers' applications for membership.

The convention then adjourned.

Other Convention Visitors at Pittsburgh.

In addition to the list of visitors attending the Pittsburgh convention of the Western Pennsylvania Independent Telephone Association, printed in last week's TELEPHONY the following arrived too late to be included at that time: A. H. Doudna, Belmont Telephone Co., Bellaire, Ohio; W. I. Steer, West Virginia Western Telephone Co., Parkersburg, W. Va.; J. F. Stockwell, Keystone Telephone Co., Philadelphia; G. A. Grundling, National Telephone Co. of Ohio, Steubenville, Ohio; W. L. Murphy, Crawford Mutual Telephone Co., Meadville; J. P. Boylan, Clinton Telephone Co., Plattsburg, N. Y.; James Knight, National Telephone Co., Fairmont, W. Va.; Eugene S. Brown, American Electric Co., Chicago; P. C. Burns, American Electric Co., Chicago; N. L. Harris, Dean Electric Co., Elyria, Ohio.

Houck Resigns American Union Receivership.

Frank D. Houck, of Philadelphia, one of the three receivers for the American Union Telephone Co., has resigned, his resignation having been accepted by Judge C. B. Witmer, of the United States Middle District Court. Charles West and William C. McConnel, the other receivers, will carry on the receivership, the court deeming two men sufficient for the work. The lines of the American Union Co. extend over a large part of Pennsylvania.

Reaches 2,000 Mark.

The Farmers' Telephone Co., with headquarters in Wenatchee, Wash., has just passed the 2,000 mark in number of subscribers. The company was organized about nine years ago to serve the ranchers south of Wenatchee and has grown rapidly from the first. The system now covers the entire length of the Wenatchee Valley, as well as a number of districts adjoining. It is serving nearly 1,800 subscribers through the Wenatchee exchange alone. Z. A. Lanham is president and H. C. Littlefield is secretary of the company.

Oklahoma Company to Revise By-Laws.

The Oklahoma Rural Telephone Co., which is one of the most extensive in the state, has appointed a committee to prepare a new constitution and by-laws, with the idea of giving more compactness of organization and more effectual regulation of the affairs of the company. The committee is composed of D. A. Lewis, Carrier; Will Stewart, Drummond; Charles Pugh, Lahoma; Will Shultz, Breckenridge; Will Bredehoft, Fairmont; Charles Payne, Waukomis; G. W. Odell, Barr; John St. Clair, Douglas; John Lindow, Enid; E. G. Clodfelter, Covington.

The company now has 735 stockholders or subscribers. There are twelve divisions, comprising territory around 12 towns, all but one being in Garfield county. These divisions are at Lahoma, Carrier, Coldwater, Barr, Waukomis, Enid, Breckenridge, Drummond, Fairmont, Covington, Douglas and Marshall.

The present officers are: President, C. H. Hare, Enid; vice-president, J. D. Sheppard, Enid; secretary and treasurer, Frank Bradfield, Enid. The directors are the foregoing, Dave Stevens, Fairmont; and Gus Heuppleheuser, Covington.

Alleged Rate Discrimination in Pennsylvania.

An interesting situation has developed at New Castle, Pa., where the Bell Telephone Co. some years ago, on the formation of an Independent company, cut some of its rates below those of the Independents and thus secured and kept much business. Some of these rates have, it appears now, become burdensome and the company is trying to raise them. A large wholesale grocer in the city executed a contract with the Bell company at that time by which the company agreed to give him service at $18 per year so long as there should be a competing telephone company in New Castle. It is alleged that, on January 15, 1913, the Bell disconnected this telephone because of refusal to pay an advanced rate of $42 per year.

The grocer thereupon applied to the court for an injunction against the Bell company forbidding their removing his telephone, disconnecting it from the exchange system, or in any manner interfering with his telephone service. A preliminary injunction was immediately granted by the court, and the case is now being followed with deep interest, both by the people of the city and the county, as it has developed that the rates being collected in the city as well as on the rural lines are not uniform for the same class of service.

The proposed advanced rates are also being fought by another citizen of New Castle before the State Railway Commission.

Authorizes Purchase of Bell Property.

The Public Service Commission, of Ohio, has authorized the Northwestern Telephone Co. to purchase the plant of the Central Union (Bell) Telephone Co., in Defiance, Ohio, the agreed price being $17,050. The Northwestern company is granted permission to issue $52,450 of stock. Of the proceeds, after payment for the Bell plant, $10,000 is to be expended for the purchase of land and the erection of a new exchange building and $25,400 for new central energy equipment and the unification and extension of the present systems.

To Force Semi-Monthly Pay Days.

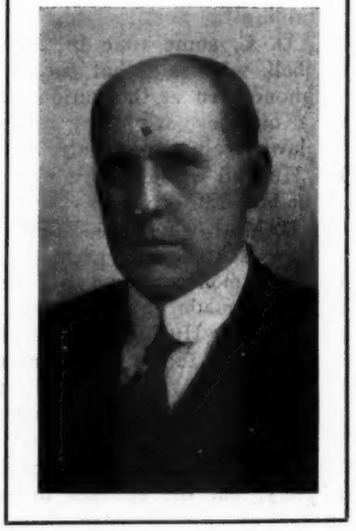
The lower house of the Oklahoma legislature has passed a bill placing railroads, telegraphs and telephone companies under the semi-monthly pay day law.

A Quartet of Men Prominent in the Telephone Field

CLAUDE LEVERING MATTHEWS, junior partner of W. N. Matthews & Bro., St. Louis, and secretary of the Matthews-Davis Tool Co., St. Louis, was born in that city October 4, 1880. He is a graduate of the scientific course at Smith Academy, 1908, and a member of the class of 1902, at Princeton University. After leaving college he took an extended trip through Europe and Asia Minor. His first position was with the Packard Electric Co., Warren, Ohio, where he helped design the first Packard motor car ever built. He went to New York to exhibit the first Packard cars in 1900,the next year becoming junior partner in the present firm. After two years' road experience Mr. Matthews was made advertising manager and engineer. He has written many of the firm's construction booklets, has perfected a number of its specialties and has taken out several patents on his own inventions. He has always affiliated with the National association and has aided in its support. He is an associate member of the A. I. E. E. and a member of several professonal and social organizations in St. Louis.

F. WILLIAM SCHAFER, director, secretary and manager of the Ida Telephone Co., Ida, Mich., was born in that city November 11, 1856. He was educated at the Michigan State Normal and Evans Business College, Adrian, Mich. Mr. Schafer spent about fifteen years in teaching school and twelve years on a farm a half mile west of Ida, before entering the telephone field. In 1904 he was one of a group of men who organized the Ida Telephone Co., was made a director and elected secretary and manager. He has occupied these positions continuously since the company incorporated, in 1906. He has, since his entry into the telephone business, been affiliated with the Michigan state association, including the Independent Telephone & Traffic Association, and the National Independent Telephone Association. Mr. Schafer has been a director of the Excelsior Creamery Co., of Ida, since its organization in 1893. He is also its secretary. He is a member of Samaria Lodge. No. 438, F. & A. M.; Ruth Chapter, No. 89, E. S.; Sitzer Tent, No. 841, K. O. T. M.; Raisinville Grange, No. 410; and other orders.

E. C. LEWIS, of Chicago, connected for the past eleven years and more with the Stromberg-Carlson Telephone Co., of Rochester, N. Y., was born in Iowa, for which fact he declares he has no vain regrets. He became interested in the telephone business in 1893 and, after building a number of exchanges in his native state, was, for several years, associated with the Independent systems in Minneapolis, St. Paul and Detroit. In 1902 he accepted a position with the Stromberg-Carlson Telephone Mfg. Co., traveling for about two years in Ohio. Since then he has been connected with the Chicago sales office of that corporation, making occasional trips into Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri and Wisconsin. Mr. Lewis is a member of the Knights of Pythias and the Elks, is a thirty - second degree Scottish Rite Mason, a Knight Templar and a life member of the Shrine. He is also a member of the International Railway Fuel Association, the Illinois Highway Improvement Association, the American Automobile Association, the Chicago Motor Club and other local organizations.



FRED COULSON, of Dunevant, Kans., has been in the telephone business since 1897, when he went to work for the Missouri & Kansas Telephone Co., as groundman. Later he was lineman, foreman, etc., at Ottawa, Kans., from 1902 to 1906. He was construction engineer at Kansas City until April, 1906, when he went with the Dean Electric Co. as general salesman in western territory. From 1908 to 1911 he was the Dean company's western manager at Kansas City, resigning to become night manager for the Kansas City Home. Ill health forced Mr. Coulson's retirement some time ago, but he is now completely recovered and will shortly again connect with some operating corporation. He was born in Pennsville, Ohio, January 4, 1879. He is a Shriner and an Elk. He has attended all National conventions since 1905, and many state conventions in the western territory. A number of the Dean company's largest installations have been closed by him in his field, notably those at Marshalltown and Atlantic, Iowa; Emporia, Kans.; Port Arthur, Texas, and Excelsior Springs and St. Joseph, Mo.

National Convention Promises To Be Unusually Big

Large Number of Rooms Already Reserved by Exhibitors and Applications for Space Constantly being Received Indicate Wide Interest in Independent Telephone Meeting Next Month—Something of the La Salle Hotel, the Headquarters

If the extent and varied character of the manufacturers' exhibits at the next convention of the National Independent Telephone Association affords any indication of the size of the forthcoming three-day meeting, the occasion will be something to be remembered—and to have been a part of. So many reservations have already been made by manufacturers and dealers, and so many others are still being received that one thing, at least, seems assured—there will be the largest and most comprehensive display of apparatus and equipment ever shown at a national meeting.

This must, in some degree, reflect the general interest in the convention throughout the country, an interest which has shown itself in a number of other ways. For instance, TELEPHONY has received inquiries from all parts of the country, some of them from companies which have not before been represented at the national conventions. Scores of others, it is believed, have had their interest sufficiently aroused to make the attendance of their representatives certain. All in all, therefore, it is safe to conclude that the meetings at the La Salle Hotel, in Chicago, on February 18, 19 and 20, will be record-breaking in many respects. The list of exhibitors to date is given elsewhere in this article.

The LaSalle—Headquarters for National Convention.

The La Salle Hotel, where the meetings are to be held, is, as has been stated before, one of Chicago's finest modern institutions for the accommodation of the public. It is centrally located in the Loop, at the corner of La Salle and Madison, within easy walking distance of the shopping and theater district, and accessible from all parts of the city by elevated roads or trolley lines. It is 22 stories in height and has accommodation for nearly 2,000 guests. It is modern in every detail and abounds in elaborately decorated and handsomely appointed dining and luncheon rooms, lounging rooms and parlors, grills and cafes, etc. The rates are reasonable, and it is urged that delegates will find it to their distinct advantage to stop at the La Salle during their stay in the city. They will thus be in the closest possible touch with the meetings and will find it possible to devote much more time to the exhibits. Also they will be cared for in a manner beyond reproach. Rooms should be reserved at an early date in order that no difficulty may be experienced in securing accommodation.

The list of exhibitors and rooms as thus far listed at National headquarters includes the following:

Cracraft, Leich Electric Co., Genoa, Ill., 1700-1-39; Telephone Improvement Co., Chicago, 1702-3; Corwin Telephone Mfg. Co., Chicago, 1704; Frank B. Cook, Chicago (Zion City), 1705; Dean Electric Co., Elyria, Ohio, 1706-7; Automatic Electric Co., Chicago, 1708-9-10; American Telephone Fire Alarm Co., Chicago, 1711; Automatic Annunciator Co., Chicago, 1712; Monarch Telephone Mfg. Co., Ft. Dodge, Ia., 1713; Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y., 1714-15; Kellogg Switchboard & Supply Co., Chicago, 1716-17-18-19; Nungessor Carbon & Battery Co., Cleveland, 1720; Stewart Bros., Ottawa, Ill., 1721; Utilities Indemnity Exchange, St. Louis, 1722; Butler Electric Co., Perry, Ia., 1725; American Electric Co., Chicago, 1723; W. N. Matthews & Bro., St. Louis, 1734; American Surety Co., N. Y., 1737; Reliable Electric Co., Chicago, 1740-41; Holtzer Cabot Electric Co., Brookline, Mass., 1742-43; Ericsson Mfg. Co., Buffalo, 1744-5; Standard Underground Cable Co., 1746; Electric Storage Battery Co., Philadelphia, 1747; Illinois Electric Co., Chicago, 1748; Indiana Steel & Wire Co., Muncie, Ind., 1750; Felix Gottschalk, New York, 1751; Swedish American Telephone Co., Chicago, 1752-53; Vote, Berger Co., La Crosse, Wis., 1724; Specialty Device Co., Cincinnati, 1726; John A. Roebling's Sons Co., Trenton, N. J., 1749; National Carbon Co., Cleveland, 1736; Leeds & Northrup Co., Philadelphia, 1738; Oshkosh Mfg. Co., Oshkosh, Wis., 1735; Duplex Metals Co., Chester, Pa., 1731; Julius Andrae & Sons Co., Milwaukee, 1730; W. N. Matthews & Bro., St. Louis, 1734; Electric Specialty Mfg. Co., Cresco, Iowa, 1727; Coffee System & Audit Co., Indianapolis,

1727; Electric Appliance Co., Chicago, 1733.

As stated previously, the entire seventeenth floor of the hotel has been set aside for exhibition purposes, so it may be fairly said that there is not an undesirable room on the floor. There still remain a few which have not been reserved, and those proposing to exhibit would do well to cover their requirements at once, taking the matter up with Miss N. Thompson, assistant secretary of the National Independent Telephone Association, McCormick Building, Chicago.

ARRANGEMENTS FOR TECHNICAL CONFERENCE.

Arrangements are now being perfected which will make the technical conferences of the convention probably its most prominent feature. The details have been turned over to a joint committee composed of the engineering and traffice committees of the Central States Telephone Service Association, which will consult with the president and directors of the National Association. R. L. Barry, general superintendent of the Tri-State Telephone & Telegraph Co., of Minneapolis, was selected as chairman. The personnel of the two committees is as follows:

ENGINEERING COMMITTEE: B. G. Groh, chief engineer for the Illinois Telephone & Telegraph Co., Chicago, chairman; Mr. Barry, and H. B. Crandall, chief engineer of the Inter-State Independent Telephone & Telegraph Co., of Aurora.

TRAFFIC COMMITTEE: W. S. Vivian, secretary of the Michigan Independent Telephone & Traffic Association, Grand Rapids, chairman; Walter J. Uhl, secretary and manager of the Logansport (Ind.) Home Telephone Co.; and J. C. Casey, engineer for the Kinloch Telephone Co., St. Louis.

A meeting of this committee was held on Thursday at the offices of the National association, at which time the program for the technical conferences began to assume definite shape. The convention committee is perfecting the balance of the program, all of which will shortly be printed in full in TELEPHONY.

Resolutions Adopted by Illinois Association.

Following are, in full, the resolutions adopted by the Illinois Independent Telephone Association, at the annual convention at Peoria last week:

"WHEREAS: This association has been advised of the death of Wm. J. Thill, of Des Moines, Ia., head of the clearing house in that state, and secretary of our sister association in Iowa, and

WHEREAS: Mr. Thill has been for years a close friend and companion and a disinterested advisor in scores of ways of many of the members of this association, and

WHEREAS: We know from long and close acquaintance the splendid character, big heart, open mind and genial disposition which made Mr. Thill a leading figure in the Independent telephone field, as well as one of the best loved men in it, now therefore,

BE IT RESOLVED: That this association go on record as expressing its sense of irreparable loss, its feeling that a break has been made in the ranks which will never be wholly filled, and its heartfelt sympathy with the members of Mr. Thill's family, who in his death have suffered immeasurably more than any one of us.

WHEREAS: We are standing upon the threshold of a new year full of promise for the Independent telephone movement; a year which will undoubtedly record greater successes and wider extension in the Independent ranks than has ever been known, and

WHEREAS: We desire to express to the fullest extent our belief in the advantages of co-operation with our associates in the Independent telephone business throughout the country, and

WHEREAS: The convention of the National Independent Telephone Association, to be held in Chicago next month, should reflect this general condition of prosperity and the advantages accruing from close affiliation, and should be, as we believe it will be, the most successful convention ever held, now therefore,

BE IT RESOLVED: That we heartily endorse the aims and the accomplishments of the National association, and its administration during the past year.

BE IT FURTHER RESOLVED: That this association, both through its officers and its individual members, will do everything in its power to promote the interest of the National association and to make the coming convention successful in every way.

WHEREAS: This annual convention of the Illinois Independent Telephone Association has again, as others have in the past, demonstrated the practical and inestimable value of an organization of this character, in that it permits men in the same line of industry to get together for a short time entirely freed from the petty irritations and cares of their daily lives; to mingle freely and interchange veiws and experiences; to realize that there are other men who have the same troubles to overcome, the same successes to enjoy and the same hopes and plans to fulfill; to feel the power and the strength that comes from such association and which permits the participants to return to their homes invigorated and freshened and ready to carry on their work more effectively than before, now therefore,

BE IT RESOLVED: That this association recognizes and desires to express its recognition of the benefits accruing to its members and desires to heartily endorse association organization work on broad general grounds.

RESOLVED FURTHER: That we, as individuals, pledge our hearty and sincere support during the coming year to the Illinois Independent Telephone Association, and declare that we will use every effort to promote its interests.

WHEREAS: The officers, directors and members of the executive committee of this association have devoted to its interests, a large amount of time and thought and have done everything in their power to conserve the interests of this association during the year just closed, now therfore,

BE IT RESOLVED: That we extend our heartiest thanks to these officers of the association and here record our genuine appreciation of their work."

These resolutions were unanimously adopted by the delegates registered at the Peoria meeting.

Keystone Statement for 1912 year.

The Keystone Telephone Co., of Philadelphia, has issued a condensed statement of earnings and expenses for the year of 1912, comparing the figures with those for the previous twelve months, as follows:

INCOME ACCOUNT.

Year Ended December 31, 1912.

	1912	1911	Increase
Gross earnings	$1,217,429	$1,167,010	$50,419
Operating expenses and taxes.	609,068	584,366	24,702
Net earnings	$ 608,361	$ 582,644	$25,717
Less interest charges	302,616	295,820	6,796
Net surplus	$ 305,745	$ 286,824	$18,921

The company will later issue a more complete and detailed report of its income, which TELEPHONY will print in full.

Property of National Corporation Ordered Sold.

Judge Dayton in the United States Circuit Court, at Wheeling, W. Va., has handed down a memorandum of opinion favorable to the plaintiff in the case of the Commonwealth Trust Co., of Pittsburgh vs. the National Telephone Corporation, upon which he will base a decree to be entered later. The suit was for foreclosure of the mortgage on the property of the telephone company, under which the trust company is trustee.

Judge Dayton decides that the property shall be sold, and that questions of law involved and equities out of the proceeds of the sale, shall be determined later.

Would Come Under Liability Act.

Application has been made by the Michigan State Telephone Co. to the Michigan Industrial Accident Board to come under the employers' liability act which went into effect in that state, September 1, 1912.

New Independent Telephone and Telegraph Co. Plans

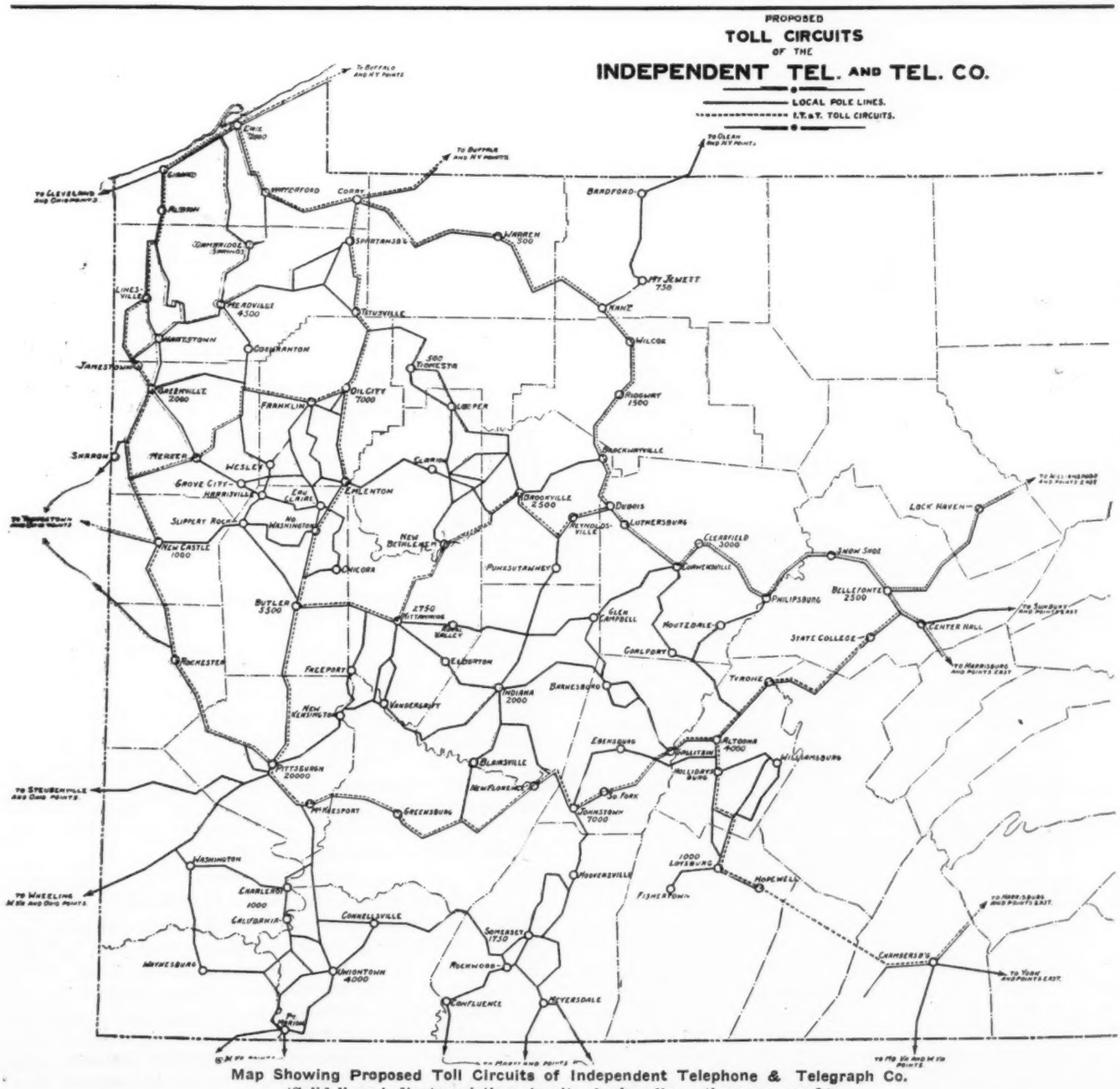
What Promoters of Company Just Organized to Bring About Comprehensive Long Distance Service in Pennsylvania Hope to Accomplish—Unique Proposal to Utilize Existing Pole Leads for New Circuits—Will Ultimately Extend Over Entire State

Below is the prospectus of the Independent Telephone & Telegraph Co., the newly organized corporation which proposes to amplify the present long distance systems in Pennsylvania. This outlines very clearly just how it is proposed to work to bring about the object desired—that is, by utilizing, so far as possible, existing pole leads of the Independent companies in the state.

While the plans, as illustrated by the map shown herewith, contemplate first the building of western Pennsylvania, it is ultimately proposed to cover the entire state. In the map the existing lines are shown by solid lines; the proposed circuits by broken ones. Following is the prospectus in full:

"The growth and development of the Independent telephone companies in the state of Pennsylvania during the past 10 years, has been most remarkable when we stop to consider that they have always been seriously handicapped by a lack of sufficient circuits for the transmitting of long distance messages.

"The entire state is covered by a network of Independent pole lines, operated by more than 100 separate and distinct companies, and so arranged and connected that a majority of these companies are now interchanging business with each other. All of the companies are well able to take care of the local business and, by means of connecting their lines with neighboring companies, to give good toll serv-



Map Showing Proposed Toll Circuits of Independent Telephone & Telegraph Co.
(Solid lines indicate existing circuits; broken lines, those proposed.)

ice up to an average of perhaps 50 miles. Beyond that distance the service, as a rule, is not commercial. This is due to the fact that the lines of several different companies must be used, often of different gauge and kind of wire, and necessitating several connections through as many exchanges, all of which has a tendency to lower the transmission and retard the service.

"Even with such poor facilities as these, the companies handled, in 1912, nearly 1,500,000 long distance messages. With properly constructed long distance circuits this number would have been three times as great, and we can, therefore, safely figure that the lack of these circuits has been the means of diverting just that many messages to the lines of the opposition companies.

"During the past few years several so-called long distance companies have been organized for the purpose of building long distance telephone lines. These companies have been, as a rule, speculative propositions, starting out with the idea of buying and operating a large number of local companies. Each and every one of them have failed to accomplish the purpose for which they were organized, and the Independent movement has suffered a loss of public opinion through their having been brought into existence.

"The local companies, however, must have long distance circuits in order to successfully compete with the opposition companies in handling this class of service; and to furnish these circuits the Independent Telephone & Telegraph Co. is being organized.

"The policy of the Independent Telephone & Telegraph Co. will be one of honest, fair co-operation with the local companies.

"The Independent Telephone & Telegraph Co. will not build pole lines, unless it is found necessary, in order to materially reduce the mileage over a given route between important points. It will not build or operate exchanges, or in any way interfere with the operation of the local companies. It will use the pole lines of the various local companies, paying a fair rental according to the amount of space used, thereby giving the local companies an increase in revenue from their pole lines without additional expense.

"Think of the tremendous advantage to all companies arising from such a plan. The Independent Telephone & Telegraph Co. is starting out with its pole lines already in operation. The only expense will be the cost of material and construction in stringing new circuits over these pole lines. The local companies will have the earning power of their pole lines materially increased, not only through the rentals they will receive, but also because they will be able to furnish their patrons with the very best class of long distance service to all distant points.

"All of the local companies are in favor of this plan, and will either rent space on their pole lines or furnish the necessary wires for carrying the long distance circuits through their territory. They are not only ready and willing to co-operate, but several have expressed a desire to become financially interested in the new organization.

"A glance at the map will give an idea of the pole lines of the local companies (solid lines) which are available for immediate use. It does not include, however, the many lines which are strictly local and which would act as feeders to the long distance circuits. The figures under the various exchanges represent the number of telephone subscribers in that locality, and the broken lines are the proposed circuits of the Independent Telephone & Telegraph Co. While the map only covers the western half, it is the intention of the company to eventually cover the entire state, but actual work will commence where circuits are most needed.

"All circuits will be of No. 8 B. & S. gauge copper wire, and the first construction will be on main pole lines connecting Pittsburgh with Buffalo, via Butler, Oil City, and Corry, and Pittsburgh with Philadelphia, via Johnstown, Altoona, Bellefonte and Harrisburg.

"Sufficient direct circuits will be provided to carry the through business, and additional circuits cut in at all the principal points to handle the business which will be offered by the various local companies.

"The earning capacity of these circuits, taking into consideration the large number of local lines in the several states which will bring in business to be carried in both directions, will be ample to pay all fixed charges and yield a handsome return on the investment.

"Another important feature to be taken into consideration is the fact that the Independent Telephone & Telegraph Co. will invest principally in copper wire, upon which the depreciation is so low that after a life of from 25 to 30 years, its salvage value may still be safely placed at 70 per cent. of its original cost.

"The board of directors will be chosen by the stockholders and will, no doubt, be men interested in the operation of the larger local companies.

"This insures an active, conservative and efficient manag-e ment and an honest, fair co-operation among all companies, which will surely result in a more rapid, healthy growth in the Independent movement throughout the entire state.

"The Independent Telephone & Telegraph Co. will be a 100 per cent. organization in every respect. It will be incorporated under the laws of the state of Pennsylvania, with an authorized capital of $10,000, and at the first meeting of the stockholders the capital will be increased to not less than $1,000,000.

"The stock is now offered to the public at $100 per share, to be paid in installments as may be called for by the directors.

"Subscriptions for stock will be received or further information furnished by any member of the following organization committee: H. E. Bradley, chairman, 135 S. Second street, Philadelphia, Pa.; E. D. Schade, Johnstown Telephone Co., Johnstown, Pa.; W. S. Paca, Petroleum Telephone Co., Oil City, Pa.; Chas. F. Heidrick, Summerville Telephone Co., Brookville, Pa.; H. E. Webb, Pittsburgh & Allegheny Telephone Co., Pittsburgh, Pa."

Complete Big Underground Installation.

Announcement is made by the New York Telephone Co. of the completion of the installation of approximately 57,000 feet of underground cable between Albany and Troy, N. Y. In order to install the system it was necessary to build 37,000 feet of eight duct subway and 85 new manholes, and to enlarge 45 existing ones. Two miles of rock and some wet sections along the Erie canal gave considerable trouble. Along the canal water seeped into the manholes and constant pumping was necessary to keep them from filling up. Material for the work was hauled in three-ton automobile trucks and heavy drays from the nearest railroad siding.

Vermont and New Hampshire Association to Meet.

The Vermont & New Hampshire Independent Telephone Association will hold its annual meeting on January 28, in Hale's Tavern, Wells River, Vt. The association has found, during the past year, that it has been an effective organization and that it has accomplished much for its members. It is urged, therefore, that every Independent company in the two states be represented at this meeting, in order that still other steps may be taken for the strengthening of the Independent situation in that field.

Business

Our American Dragon—Lots of St. Georges

Bp J. C. Kelsey

There is an expression which is not so lovely, yet which is common these days: "It beats hell how business keeps up!"

Yet, if you stop to analyze conditions, you can well reverse that lovely (?) expression in this manner: "It beats business how hell keeps up!"

We have seen much more of the agitator's side of it; the iniquities of business, big and little, have been paraded before our eyes.

We have heard but little of the virtues of business. In other words, we have moulded business into the form of a dragon, and many of the St. Georges have sallied forth to destroy it.

Not with undaunted physical courage, with sword in hand, but with pen and pencil, surrounded by four safe walls, and protected from libel only by the very legal difficulties of proving libel.

A man with a blistering pen in hand may have some courage, yet it is not of the St. George kind. It lacks romance.

Business still is able to resist attacks—coming from Congress and magazines—but who can say that the American breadwinner is not carrying a few serious wounds?

What is business, anyway? Why is it subject to so much attack? And is it justified? Business is the simplest thing in the world—foolishly simple. A child can handle it. All you have to do is to take in more money than you pay out. The difference is profit and is the measure of the success of the undertaking.

It looks easy to anyone, who has not been in business, with its headaches and heartaches. Here is a simple formula for business success. It is so absurdly simple, no wonder people can jump on business men.

Put a load of debt on your shoulders for a plant or storeroom, machinery fixtures, materials or finished goods. This practically makes it impossible for you to succeed.

But, after getting the factory or storeroom in order, you have other things to do. Know in advance what buyers want. Be able to deliver anything, however rushed and however special it may be, right on the day the order is received.

You must make everything better and for less money than any one else. You readily appreciate what an easy thing this is!

You must know every item your competitors know, but your own affairs must be iron-bound with secrecy. Employ lots of men, and then listen to the "walking delegate," who tells you whom to hire and forbids you to fire them. Labor institutions have a general idea that enough men quit voluntarily for the good of the business.

You must dominate the field. Get all the orders, but do this carefully, because competitors may find you out and become more active. You must be sure to hold down your expenses and always remember to increase the receipts at the same time.

O, it is all so ridiculously easy! Anyone should be able to manage a business enterprise. But hold on! I am not done yet!

You must systematize your business so that you know when a mouse gnaws a hole in your floor, yet must not get lost in the mazes of red tape. You must keep ahead of all the business records—if March 1912 was good, March 1913 must be better.

Don't forget that you have to establish credit for yourself, and at the same time adopt a stern and vigorous denial of credit to your customers.

You will have to build up a fine organization so that you can leave on a vacation, yet remember that this organization must be kept in such a state that they can not leave you and organize a competing company. It is merely this —you simply act Dr. Jekyll and Mr. Hyde.

But your duties as a business man are not yet done. You must run your plant so that it can fill all the orders of a busy season, and push your sales department so that the orders will keep your plant busy in dull times.

You must be generous with stockholders, yet you must be careful lest these greedy individuals take the plant away from you.

You must be able to show big assets to your bank, and at the same time make the tax assessor weep at the bareness of your existence.

If your factory burns, tell the trade that you were just going to shut down for inventory, and were going to put in new machinery, anyway. If called upon for vast subscriptions to help the cause, do not add it to the expense of running your business.

O, it is all very simple!

Business is born of hope, and usually dies by the violent hand of a receiver.

Think as hard as you may, and count on your fingers, or use a lead pencil and paper—and in your own town, too, and you will find that 95 per cent. of all enterprises started, have either been failures or disappointments. Even the great McAdoo tunnels in New York City have not yet paid. In spite of the best possible calculations, these tunnels are not earning bond interest. Today, every dollar of the bonds has been reduced to 50 cents, and the holders thereof can not help themselves.

I can name hundreds of enterprises, most of them familiar to you, built on hope and great expectations, which have failed to pay bond interest.

When you get down to it, business is always one jump ahead of a receiver. Today, the receiver question is a big one. I wish we had more courts such as Judge Landis holds. He does not believe in traditional receiverships. He makes conservators for bankrupt properties and he studies them!

Do you know that we are a queer lot of mortals anyway? We are a queer nation, too.

We have more laws on our statute books than all of Europe put together. We painfully elect a new bunch of law-makers every two years.

Not only do we load upon our shoulders a bunch of lawmakers, incompetent to handle our conditions, but we accumulate a nice debt in electing them.

Men who have no occupation save that of running for office write our laws. And then the courts turn around and make some court room loafer, or some relative who is out of work and must be supported, a receiver for a business which is in trouble.

Now, it does not matter what happens to a business.

Nothing can happen to a receiver; he is a sacred person! Did you know that it is against the law to ask a receiver a question?

Well, if you are foolish enough to interrogate one, do not be surprised to receive a haughty stare of disdain! There is nothing personal in such treatment, you are only being punished for being in contempt of court.

In this "land of the free and home of the brave" we have high ideals of liberty. Along in the 60's we spent billions of dollars, and countless lives were lost for the net result of striking off the shackles of the black man.

But business has not been so fortunate. We still have slavery—that of receiverships!

It may be your business, or your friend's business that has fallen under the evil eye of failure. You are a poor, despised outsider, and the receiver can wipe his feet on your trouser legs. You can't kick; you would be in contempt of court to do so.

He sits at your desk, smokes your cigars, opens your letters and prints his name over or under that allotted place where yours ought to be. And, worse yet, he tells your faithful book-keeper that there is nothing doing, when you ask him for information or figures.

And getting out of a receivership is like getting out of darkest Africa. The trip from Bombaloo to Jerusalem, without provisions, is no more hopeless and tedious.

And what is left is something as tangible as what Pat shot at—nothing!

But there are other perils of business. Just as wild animals have their particular parasites, the American Dragon has its share.

The receiver can hardly be called an active parasite. He only comes in at the death, like the buzzard who revels in carrion alone.

There is a disease which might be called "elephantiosis." It is the dangerous tendency to grow large, and have the sickly characteristics of a giant.

The business, after starting, soon runs against a high cost of production and operation. The natural thing is to increase the output. This requires new buildings—more debt.

Having more buildings, the output must be farther increased, because the haunting ghost of increased production is the business man's trial.

And so it goes; the output swells the factory; the swollen factory swells the output; and, to the observer, he seems to be the child wonder of industry.

But if this business man bared his heart, he would prefer his former conservative business, which was really comfortable.

Unwelcome industrial conditions made the business become gigantic, and it became a leader. A leader is one who sets the pace. In the great race, the man who sets the pace at the start, rarely finishes first. If he does, he suffers all his life for this superhuman effort.

The big business man, forced to be a leader for economic reasons, has a hard position to hold.

He is even trying to speed ahead of his competitors and at a time when he is no longer a racing machine, for prosperity has been undoing him, making him fat, lazy and unfit. Or he is dead at an early age, killed by thinking in bed, a la Harriman!

If you will remember your scripture lesson, you learned a great deal about the "changing forces of nature." You learned that Joseph guessed that the seven years of plenty would be followed by an equal number of years of famine and want. And he cornered the wheat supply!

Think a moment in your own experience. Do you know of any industrial concern, factory, hotel, opera house or even saloon which has held its leadership for over seven years.

Just make up your mind that even great trusts are liable to this rule. After seven years, things crumble from under them, competitors take heart, and people investigate. No one seems to be able to make a big bluff run more than seven years.

So, when our St. Georges set out to destroy this great dragon of business, they really need have no fear. They are on a needless quest.

Big business is dead wrong in the minds of the people, because the very laws of the people make them do things which seem wrong.

We have banking laws which actually compel the practice of loaning money exclusively to speculators on Wall Street. Then we go to work, holding ourselves blameless, and jump on the poor victim of the law.

If we want to discourage speculation, we must make our commercial paper the basis of activity. As it is, we make gold and the debts of our country a basis of currency.

Why not make the 60 and 90 day debt of the business man a basis of currency? It would utterly change our business conditions. It would help the local industry.

In 1907, the European countries had a series of financial depressions or over-strained credit, but they had no panic. However, we did! We do not have a central bank with power to make proper use of commercial or business men's paper.

The old theory of "public be damned" which has assumed by the business men of yesterday, has given way to a theory of the "business man be damned."

Here is the truth of it. Business men of the past made the bed, and the business interests of today have no choice but to lie in it. It is the old, old story of the turning worm!

There are many men who still resent the so-called "interference" with business. You can read the speeches of railway men, practically every one taking a shot at the Interstate Commerce Commission or state commissions.

They are making a great mistake in tampering with the public buzz-saw. To hear these railroad men, you would think that commissions do not try to understand the increasing cost of maintenance, etc.

That is purest libel. Every commission I know is making the closest study. In fact, they give 90 per cent. of their decisions in favor of corporations.

Business is our American Dragon and we are after it hot-foot, and with anger in our hearts. That is the way it sounds.

But the real spirit of the age today is not unrest at all. It is an awakening desire of the world to find out whether its diseases are of fact, or only exist in the imagination.

Besides, every American citizen is practically a business man, even though it may be in a small way, for the public really owns the business. We are merely investigating ourselves.

Wall Street and big business need not be alarmed any more than a boy should be over a severe spanking by his angry father. It is embarrassing and possibly painful, but it is rarely ever serious and never fatal.

I believe in unrest. It is like reasonable dissension; it is a prime mover in the march of progress.

I believe that the country is in a fair way to make living more worth while. It is only a few years ago that even a princess had to live in surroundings that the daughter of our poorest laborer would hold up her nose at. Only a century

ago a feudal lord could have taken your father, brother or sister and allowed them to rot in his dungeon.

I believe the trouble with business is purely imaginary—the result of a disordered indigestion. Wall Street dines too well. It has the lunch habit, and the cocktail habit, and too much Bright's disease. Let it take better care of its stomach!

I don't believe in dragons. I believe we have them confused with stomachs and nerves. Like the egg and the hen, we can't tell which comes first, the worries of business affecting nerves and then stomach, or the stomach affecting the nerves and making business worries and phantoms.

It may be part of the Jekyll-Hyde features of business.

As I write, I am on my pet Pennsylvania train, riding through the beautiful scenery, in fact, rounding the Horse-Shoe Curve.

I have always been accused of being unrhetorical and treating the unity of my paragraphs with criminal intent. I can't blame the Curve for this.

I have great respect for the endurance of my readers, and their patience. As you endure my literary crimes, so has the world always endured great wrong—or thought it did.

Hamlet said:

"The time is out of joint. O cursed spite
That ever I was born to set it right."

Even Cicero complained of the times. There is nothing new in this emotion:

"The oppressors wrong, the proud man's contumely,
The pangs of despised love, the law's delay,
The insolence of office, and the spurns
That patient merit of the unworthy takes
When he, himself, might his quietus make."

MORAL: Don't take things too seriously!

Idaho Association Changes Name to Western Red Cedar

At Annual Meeting New Name Was Adopted as Being More Representative of Membership—Committee Appointed to Draft By-Laws for Association—Interesting Results of Comparative Tests of Michigan White and Idaho Red Cedar Poles

The annual meeting of the Idaho Cedarmen's Association was held in Spokane, Wash., Tuesday, January 14, 1913. The meeting was called to order by President Lindsley with practically every member company represented.

Inasmuch as the name of the association is really a misnomer, as a very large portion of the poles handled by the members are produced in Montana, Washington and British Columbia, and only a comparatively small portion of them in Idaho, the name of the association was unanimously changed to the Western Red Cedar Association.

At the time the Idaho Cedarmen's Association was formed in 1906 a large portion of the production was in Idaho. The increasing demand for the Western poles, owing to their superiority over other woods, and the growing scarcity of other forms of pole timber, particularly the northern white cedar in the longer lengths, has caused the industry to spread into the other states and across the line into Canada.

It was reported to the association that the Northwestern Cedarmen's Association were considering changing its name to the Northern White Cedar Association, and it was therefore deemed advisable to change the name to conform with the action of the eastern dealers.

The following officers were unanimously elected for the ensuing year: President, H. C. Culver, Sandpoint, Idaho; vice-president, M. P. Flannery, Spokane, Wash.; secretary-treasurer, R. L. Bayne, Spokane, Wash.

The publicity committee, appointed at the last annual meeting, presented a preliminary report of the United States Forest Service covering a series of tests, made at the Seattle Laboratory, of the strength of western red cedar and northern white cedar, and stated that a more complete report would be presented by a Forest Service test at a later date.

The preliminary report covered a series of tests on 15 7-in. top, 25-ft. poles of each species. The northern white cedar poles were purchased through one of the members handling them, and shipped from the Minnesota producing district. The western poles were shipped from one of the yards in the neighborhood of Sandpoint, Idaho. In each case care was taken to secure poles representing the average grade of material.

The preliminary report from J. B. Knapp, assistant district forester at Portland, Ore., submitted to the association under date of January 10, 1913:

"Since all tests on full sized poles of Michigan white cedar and Idaho red cedar furnished by your association have been completed, I wish to give you a preliminary report of the results of these tests.

In all, 15 poles of each species were tested in an Olsen 200,000 pound Universal testing machine, which had been modified with special framing to accommodate the full sized poles. The two ends of each pole were held stationary and the load was applied at a point corresponding to the ground line after the pole is set.

The Michigan white cedar poles were much inferior in quality to the Idaho red cedar poles, since all of the Michigan poles contained varying amounts of center rot and were very rugged, due to a large number of knots, some of them of considerable size. Only three of the Idaho cedar poles showed traces of center rot and all Idaho poles were quite free from knots. The center rot and knots in poles are serious defects when the strength is considered.

The following figures show a comparison between the strength of the two species of poles which your association contributed:

	Modulus of Rupture Lbs. per sq. in.	Breaking Load Lbs. per sq. in.
Michigan white cedar..	3,400	8,430
Idaho red cedar.....	6,670	18,510

The breaking load given above is not the actual average load required to work the poles to destruction, but is the actual load modified so as to compare the poles on a basis of equal diameters. The modulus of rupture is the unit load in pounds per square inch which disregards size and length.

A more detailed analysis of the results of these tests will be made when the computations for each pole of each species have been completed, and this information will be furnished you in the form of a project report."

The report was accepted and the committee instructed to request that similar tests be made on the cedar produced along Puget Sound.

The committee appointed to take up with the Master Car Builders' Association the rules relative to the number of stakes and amount of wire required for loads, reported and a lengthy discussion followed.

W. M. Leavitt and E. A. Lindsley, with the president as member ex-officio, were appointed to be a committee to draft a constitution and by-laws for the association. This

committee was instructed to incorporate in the by-laws a provision for annual dues of $25, payable semi-annually, in place of the present dues of $10.

The following companies were represented at the meeting:

B. J. Carney & Co., M. P. Flannery, Spokane.

W. G. Chaney Co., W. G. Chaney, Spokane.

E. T. Chapin Co., E. T. Chapin, Bovil, Idaho.

Humbird Lumber Co., W. C. Wolfe, Sandpoint, Idaho.

Lindsley Brothers Co., C. P. Lindsley, E. A. Lindsley and R. L. Bayne, all of Spokane.

Lost Creek Cedar Co., R. G. Jones, Lost Creek, Wash.

National Pole Co., W. M. Leavitt, Spokane.

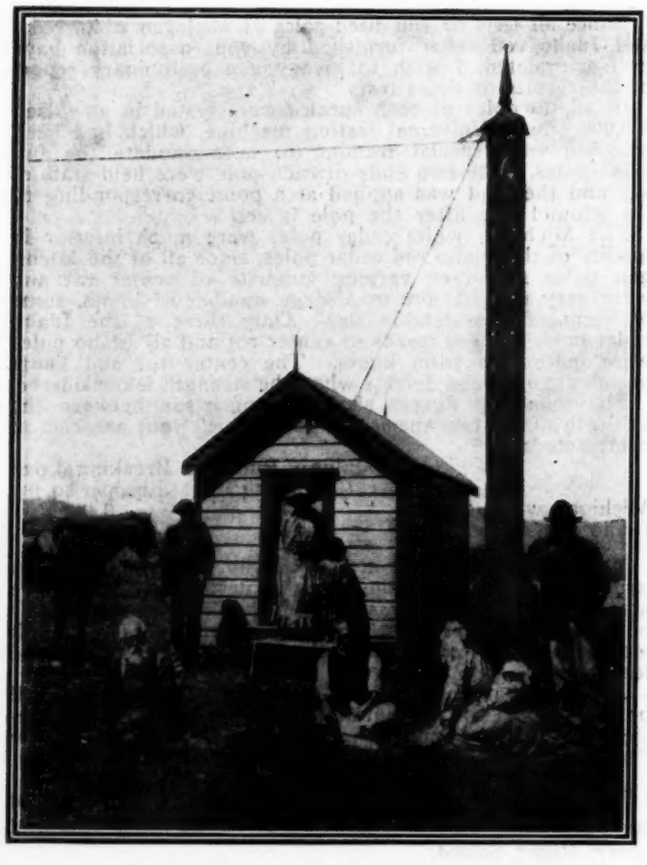
Sandpoint Lumber & Pole Co., H. C. Culver, Sandpoint, Idaho.

Valentine-Clark Co., E. L. Clark, Minneapolis, and L. H. Clark, St. Maries, Idaho.

Western Lumber & Pole Co., G. C. MacDonald, Spokane.

A New Zealand Telephone Pole.

The Maoris, of New Zealand, are in many respects a very enterprising people. Quite recently the natives of a somewhat isolated portion of the North Island have linked their villages with the outside world by fixing up a telephone service at their own expense, says Wide World. The last post, depicted in the photograph, here reproduced, is probably the most unique telephone pole in the world. It is grotesquely ornamented with old-time



An Extraordinary New Zealand Telephone Pole.

Maori carvings, the diabolical-looking head surmounting the top having insulating caps for eyes in place of the usual circle of pawa shell. When our correspondent came along, the old gentleman seen leaning against the post was solemnly addressing the wooden figure, being under the impression that this was all that was necessary in order to convey a message to a relative living in the next village on the circuit!

A. T. & T. to Issue $67,000,000 Bonds.

The directors of the American Telephone & Telegraph Co. have decided to authorize the issue of $67,000,000, 20-year, 4½ per cent. convertible bonds, the issue to be offered to stockholders for subscription at par and interest in the proportion of 20 per cent. of their stock holdings. The new bonds are to be dated March 1, and will mature on March 1, 1933. Bondholders will have the right to convert into stock at $120 per share after March 1, 1915, and until March 1, 1925. The right to subscribe for the bonds will expire February 17.

Commenting on this announcement the financial editor of a leading daily says:

"During the past year its subsidiary companies did more than $50,000,000 financing. The parent company's 4 per cent. collateral trust bonds are selling close to the lowest price since the depression of 1907-8, a fact which ordinarily would not seem to encourage new financing just at this time.

Leaving out of account short term notes which have been refunded, the American Telephone & Telegraph Co. and associated Bell companies have done $252,000,000 financing in the past six years at the rate of $42,000,000 a year. This rate was more than maintained in 1912 by the sale of $14,000,000 bonds by the Chicago Telephone Co., and $25,000,000 financing by the New York company and $10,000,000 by the New England Telephone & Telegraph Co."

The syndicate which has been formed to underwrite the bonds is said to include among its members J. P. Morgan & Co., the First National Bank, Kuhn, Loeb & Co. and Kidder, Peabody & Co., of New York, and Baring Bros., Ltd., and Morgan, Grenfeld & Co., of London. This is practically the same syndicate which was formed to underwrite the previous issue of $150,000,000 convertible bonds.

Program for Minnesota Convention.

The executive committee of the Minnesota Independent Association has concluded to hold a two-day convention on January 28 and 29, at the Ryan Hotel, St. Paul. This will give the members an opportunity to visit the legislature, while it is in session.

As the coming convention will undoubtedly be the most important in the history of the association, because of the vital questions to be considered, it is hoped that every company will be represented. The matter of a public utility law will come up for consideration, as well as other questions of moment. The program, as announced, will be as follows:

TUESDAY, JANUARY 28

10:30 a. m.—Reception of delegates by the executive committee and officers.

2 p. m.—Convention called to order by the president.

Welcome by Mayor Keller, of St. Paul. Response by the president.

President's address, Lucius F. Clark, Bellingham.

Address by Manford Savage, president of the National Independent Telephone Association.

5 p. m.—Executive session; reading of minutes; secretary and treasurer's reports; appointment of committees; general business.

Evening—Social feature to be arranged by the supply dealers of the Twin Cities.

WEDNESDAY, JANUARY 29

Forenoon—Visit to the legislature.

2 p. m.—Address by J. C. Crowley, secretary of the Wisconsin Independent Telephone Association.

Technical talk on long distance service by member of the Tri-State engineering staff.

Reports from members of the association.

Question box.

5 p. m.—Executive session; reports of committees; election of officers, etc.

Practical Telephony for the Practical Exchange Manager

A Series of Articles Relating to the Construction, Maintenance and Operation of a Moderate Size Telephone Exchange, Which Began in the Issue of September 21, Expressed in Everyday Terms, Easily Understood—Principles Easily Applied

By H. R. Van Deventer

Going back to the voltmeter method of testing, it is obvious that a long cable will have considerable capacity. This may be approximately measured by a voltmeter.

Voltmeters suitable for such measurements are so adjusted that the needle will swing or "kick" when the battery is quickly reversed in a circuit containing the voltmeter and capacity in series. This is accomplished by a reversing key, arranged as shown in Fig. 26. For convenience certain other keys are used, the entire combination forming the well known "testing set," such as furnished with wire chief's test tables, etc.

This "ballistic" feature, whereby the voltmeter needle kicks, due to the capacity, is not present in all makes of voltmeters which may be entirel satisfactory for all other measurements. Usually instruments possessing it are of high resistance and of great sensibility. This feature should be specified when a good deal of cable is in use, or where the exchange is common battery.

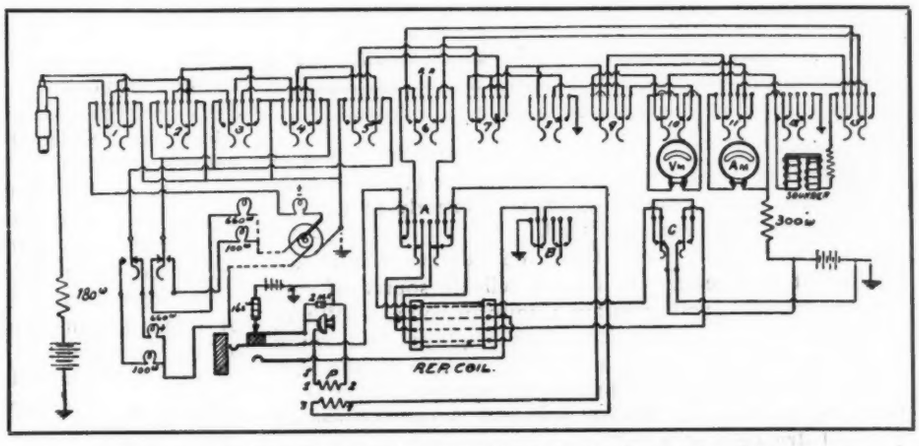


Fig. 26.—Testing Outfit for Wire Chief's Desk in the Larger Exchanges.

In common battery exchanges, the ballistic voltmeter affords an easy and positive means of testing condensers. As there is a condenser in each telephone set, an ordinary voltmeter would only show the leakage of the line and condenser and not its capacity. The ballistic instrument on the other hand will show by the comparative kick whether the condenser is of one or two m. f. capacity and, if a party line, whether there are two or more parties on the line.

For instance, with a Weston 4,000-ohm ballistic meter, an ordinary subscriber's set with a two m. f. condenser shows about 10 volts kick. Should the installer make a mistake and install a harmonic set with a one m. f. condenser, the wire chief can instantly detect it by getting a kick of only five volts when testing, the kick being proportionate to the capacity within certain limits. In case of a party line with four instruments, it is only necessary to note on the record card the combined kick of the line with all four instruments connected. Then in the future, if any one tap to a party should open, its loss can be ascertained on test by the lessened kick.

This also enables the wire chief to detect the placing of extension bells and extra sets in service by the subscriber, that is, sets in which bells and a condenser are used. To locate such attachments, for which the company receives no pay, is a difficult matter, as often there is no regular inspection of the subscriber's premises unless trouble is reported. With the voltmeter, however, the attachment is readily discovered by the increased capacity.

Another advantage of the ballistic voltmeter, is the determination of the distance away from the office, of an "open." It is obvious that a long stretch of cable, open at the distant end, will show considerable capacity. The wire chief should keep a record of the capacity of each cable to a certain point, for instance, to the most distant terminal. Then, in case of an "open," if the capacity tests much less, it is in the cable between the exchange and the terminal, and may be definitely located by more delicate means.

The skillful use of the voltmeter and a careful analysis of the character of the needle movements will solve most trouble problems which are reported from day to day.

If, upon test, the needle takes a steady position it, of course, indicates a ground or short circuit, as the case may be. It may, however, have a sluggish and uncertain action which usually means water in cable, dirty carbons, a bad condenser in the telephone, a high resistance ground, or a partial open and short, such as a burn.

A jumping needle indicates the nature of the trouble to be intermittent, caused by wires of an open line swinging together, twin conductors in trees, very loose particles of carbon dust in arrester, or pieces of broken fuses, wire across the line, or occasionally a foreign current on the line.

Each case of trouble should be tabulated and the behavior of the meter noted, until the wire chief will almost intuitively know what the various indications mean. A receiver off case of trouble looks like a short circuit but by listening in, the real facts are obvious.

The loop in total resistance of each line should be accurately measured by short circuiting the line at the instrument and measuring it from the office. This must be noted on the card. The gradual rusting of iron line joints will cause this to vary somewhat, but if any one joint rises to an abnormal resistance, it may be located by short circuiting the line further in toward the exchange. Some lines will measure only a few ohms when new, and a few hundred in a year or two, due to rusty joints.

At a temperature of 68 deg. Fahr. the resistances of iron and copper wire are as follows, these being higher in warm weather and lower in cold:

Hard drawn copper	Weight per mile	Resistance per mile
No. 8 B & S	264	3.31
No. 9 B & S	209.3	4.173
No. 10 B & S	166	5.264
No. 12 B & S or No. 14 N. B. S.	104.5	8.37

B. B. galvanized iron.	Weight per mile.	Resistance per mile.
No. 9 B. W. G.	320	17.19
No. 10 B. W. G.	260	21.15
No. 12 B. W. G.	165	33.33
No. 14 B. W. G.	96	57.29

These figures are only for a single wire. A mile of metallic circuit of No. 14 B. W. G. iron would measure 114.58 ohms if all splices were perfect. While this can be measured within a few ohms by the voltmeter alone, a quick way of getting a very accurate measurement by calculation is to

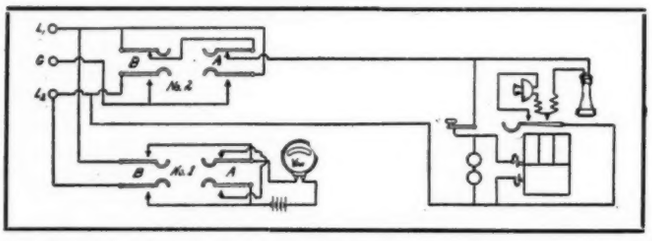


Fig. 27.—Circuit of Testing Outfit for Small Exchanges.

first measure the line. Then connect a resistance box in circuit instead of the line and unplug enough resistance to make the meter reading correspond exactly to what it was when the line was connected.

In all tests when more than approximate results are required, it is necessary to have a reliable source of current supply which will maintain a uniform voltage. Where a common battery is used, it is often employed but, owing to the fluctuations due to the limits of charge and discharge, the readings are liable to be affected. It is well, therefore, to have for testing purposes, a test battery of seasoned dry cells at a uniform voltage equal to the normal average voltage of the exchange battery. In 24-volt exchanges, three sets of 16 or 17 dry cells in series connected in multiple, will give good results and last a long time, as, with a high resistance voltmeter, but little current is required. This battery should be "aged" by discharging it through a high resistance until the voltage of the cells is uniform.

The outfit shown in Fig. 26 for testing purposes is elaborate enough to meet the requirements of the largest exchanges. A good deal of the equipment shown is unnecessary, and may be dispensed with in smaller exchanges, especially those of the magneto type. For these smaller exchanges, the arrangement shown in Fig. 27 may be used. The two double throw keys may be ordinary ringing keys with the springs bent so as to stay "on." These are mounted in the door of an ordinary telephone set and comprise the talking and ringing parts of the testing set. The exact telephone wiring shown need not be adhered to; in fact, a series ringer arrangement is preferable in many cases, with a push button to short circuit the ringer.

Referring to the keys, when key No. 1 (Fig. 27) is thrown to operate springs on the *A* side, the battery is connected directly to the voltmeter. When thrown to the *B* side, the line, voltmeter and battery are in series, and measurements can be made of anything connected to the line posts.

To test for a ground on L_1, throw keys Nos. 1 and 2 to *B*. This action grounds L_2, and the leakage from L_1 to L_2 and ground can be measured. Throwing key No. 2 to *A* reverses the process.

Talking and ringing tests are made in the usual manner, keeping in mind the fact that it is possible to get a faint ring on a good working line if it is a long one, especially through cable, owing to the capacity. This is often confusing, and the voltmeter is the only reliable test under such circumstances.

By mounting the apparatus in a box about 10 ins. by 12 ins., a very handy portable test set can be made. This is easily transportable to outlying country lines, tool stations, etc., and greatly facilitates the work of cutting in new cables, etc. The generator and hand set from the ordinary testing set can be utilized to advantage. A portable type voltmeter mounted with its face flush with the front of the box, with a piece of ¼-in. plate glass over the scale glass, will give satisfaction. The battery may consist of 16 or 17 cells of dry battery, such as are used in flashlights. When used with a high resistance voltmeter, these little cells will last a long time. A great convenience is the use of wing nut binding posts, which avoid loose connections and the use of screw drivers or wrenches. Paste a table showing the voltmeter readings per mile or per 100 ft. of standard gage wire cables, etc., in the lid of the box, and insist upon records being kept of the resistance of new lines when installed.

(To be continued.)

The Signal Corps to the Rescue.

The value of the signal corps of the Ohio National Guard to the community even in time of peace was demonstrated in a spectacular manner recently, following the big storm which cut Toledo, Ohio, off from communication with the outside world. The signal corps accomplished in a few hours what it would have taken telephone or telegraph companies days to do, thus saving thousands of dollars for the telegraph and railroad companies as well as saving money and annoyance for the public.

The storm carried down miles of trunk lines in the vicinity of Toledo and linemen were helpless on account of the weight of the ice-encrusted wires. At this point Capt. Kirtland, Lieutenant Scofield, Clyde Anderson and Alfred Morrison volunteered their services, which were gratefully accepted. With the signal corps equipment the guardsmen started to Hallet, Ohio., on a Wednesday morning, where a mile and a half of wire was trailing in the snow between that place and Alexis, Mich. Only three poles were left standing, the rest having fallen under the pressure of ice.

The guardsmen laid seven miles of field wire Wednesday morning, the wire used being 10-strand piano wire, very flexible. Within was a single copper strand, heavily insulated. The wire was paid off a reel and laid in the mud, over fences and through small streams. It bridged the gap of one and a half miles and two Postal telegraph wires were soon in working order. From Wednesday until Friday these supplied the only communication the company had between Toledo and Detroit. The wire worked night and day and was perfectly safe, as it is absolutely weatherproof and, being on the ground, neither storms nor ice could affect it.

In the mile and a half gap that was down there were eight Postal wires and the dispatcher's telephone circuit of the Pere Marquette from Toledo to Saginaw. The line was working to Alexis and from Hallet to Toledo but was silent between these places.

There were many miles of freight trains stalled in the Toledo yards which could not be moved until communication was established. Within an hour and 40 minutes of the time they were called the signal corps had three miles of buzzer wire laid and the dispatcher was delivering orders from Saginaw to Toledo. In another half hour the freight, some of which was perishable, was moving.

The buzzer wire employed by the Signal Corps weighs only 10 pounds to the mile and one man can take a spool and run along with it. It is exceedingly strong and is insulated to withstand a flood. The automatic army wire cart, with an outfit for five miles of telephone and telegraph wire, and instruments to equip seven offices, was used in the work of connecting Toledo with the outside world. The wire costs approximately $75 a mile.

The signal corps men weighed a piece of 14-gauge telephone wire, coated with ice, and found that a mile of the wire weighed 4,200 pounds.

Railway Telephony—Practical Points in All Branches

A Regular Department Which Appears Bi-Monthly—Scope Includes Principles of Construction, Testing, Operation and Maintenance—Columns Open for Contributions on Matters of General Interest to Those Engaged in This Branch of Telephony

Testing Telephone Train Dispatching Currents.

By John A. Kick.

While a bridge is of great assistance to a wire chief and in fact is indispensable for testing commercial telephone circuits, it is not an absolute necessity in testing telephone dispatching and message circuits as other means are at hand. A ground can be located at a station or between two stations by the "listening test." A cross by the "talking test" and induction and other troubles by one or both of these tests in combination.

On selective circuits having a number of bridges, it is not always practical to give up the circuit and strip the line for a bridge measurement, nor is it always possible to raise the smaller stations. Hence other and more practical means must be employed. The dispatcher may complain of a noisy circuit and the wire chief, with the assistance of the dispatcher, will definitely locate the trouble without serious interference with the dispatcher's routine.

The listening test is positive, provided however the user is posted on the laws upon which it is based. There are several reasons for the ordinary failures and errors in using this test. Some of them are: Lack of practice, which teaches the ear to be "a keen telephone ear"; insufficient knowledge of the characteristics of electrical circuits; failure to study inductive effects produced by various paralleling circuits. A working knowledge of Ohm's law and a study of the magnetic circuit will clear up many difficult problems.

Wire chiefs can often trace inductive disturbances to their source by some characteristic of the primary circuit, which becomes evident when the tone of the induced current is carefully studied through the medium of "the telephone ear." The source of an inductive trouble is frequently located as at a distance or quite near, by the clearness of the tone; the observance of a clearly defined rise and fall; or a number of notes which appear to be superimposed, one upon another.

To some wire chiefs an inductive disturbance is a "noise" and unusual credit is taken when it can be located between *X* and *Y* and a lineman instructed to clear "the Disprs. CKT, noisy between *X* and *Y*." To other wire chiefs this trouble is an interesting problem and its solving is complete when the source and cause are both definitely known.

A good wire chief can assist an ordinary line man to such an extent as to secure good results. A wire chief who is always guessing and does not use all the "trade kinks," soon loses the confidence of the linemen and low efficiency is the result.

Too many wire chiefs use the stock phrase, "crossed to battery between *X* and *Y*," never going any further with the test although in almost every case, further and more definite results could be secured. There certainly must be a source to produce a "battery," hence further effort would locate the offending circuit. Its identity would perhaps fix the point of contact within a comparatively short section and allow the maintainer to act quickly with assurance of results within a given period.

A telephone pair "open between *X* and *Y*" is a very unsatisfactory entry in a wire chief's log, as it is an indication of failure to follow up the trouble. Two wires open between two stations and without further notation, means that the two wires are separated with all four ends clear. There are conditions under which it is impossible to pick up the circuit beyond the trouble to test back, but they are infrequent. A pair open and clear at both ends, has a suspicious significance of protection trouble, or irregular testing by reason of some way station attendant giving a false test. Although it is not impossible for a pair to be "open and clear, both ends," yet it is very infrequent. Such an indication is worthy of a "check test," which will often locate and clear the trouble.

A case comes to mind of a wire chief keeping a lineman after an open wire between *X* and *Y* stations for three days, when it was in the section between *Y* and *Z* and not indicated on account of the ground eaten off at *Y*. Very poor judgment, indeed! It indicated that the wire chief was not a thinker or he would have become suspicious after the lineman had made one trip. A test of the ground on another working wire or backing up on the wire in trouble, would have indicated the "poor ground."

Having been appointed wire chief on a railroad division, I found that only one or two way station operators could patch wires or were able to locate telephone troubles. With a telegraph switchboard and a pocketful of plugs, I traveled over the division. The results from these instruction visits were surprising in that with very few exceptions, the operators could make any kind of a patch. My system of instructions was based on the belief, "Know the designer's idea and the rest is easy."

The procedure was about as follows:

Question.—"Do you understand the switchboard?"

Answer.—"Yes," or, "I think so."

Question.—"Can you explain its construction?"

Answer.—"Yes."

The operator then tried in some cases but frequently had to give it up. With the small board in hand, as a sample I then explained the mechanical construction, assembly, and the electrical paths produced by plugs being introduced between discs and strap, then again the question:

"Do you understand it?"

Answer.—"Yes."

The operator was coached until he was able to rapidly go through the explanation and to verify his explanation by reference to the board. He was asked to make some complex patches and explain the circuit which resulted.

With the telephone a detailed explanation of the apparatus, the primary and secondary circuit, and what should be done to definitely locate troubles, was carefully gone over until the operator could give a good account of his actions in any case about which he was asked. A wire chief can, from a distance, frequently assist an operator in locating telephone troubles, such as on yard and block circuits, by having the way station operator follow out a "process of elimination." "Process of elimination" is the slide rule of a wire chief with which he divides his troubles into primary and secondary circuits, subtracts the troubles from the circuits and equipments, multiplies his capabilities and adds to the general efficiency.

Short Method for Excess Resistance Calculation.

C. S. Rhoads, Jr.

There seem to be very few who use the quick method of calculating excess or balancing resistances for telephone train dispatching circuits. The older method, called the fall of po-

tential method, required the calculation of the drop in voltage between stations. This, added to the voltage found at the previous station, gave the voltage at next station. From this voltage the resistance of the bridge at this station was calculated, and subtraction of the selector resistance left the necessary added or excess resistance.

This method requires a table of five columns, showing loop resistance between stations, current on line between stations, voltage drop between stations, resistance of bridge, and excess resistance, with an additional column, if it is desired to convert the exact resistance figures into round numbers for practical use. The calculation of a 30-station line using this plan requires an hour or more for the various multiplications.

It is a fact that no matter what the resistance of the selector used or the operating current required, the excess resistance is the same. This fact led the writer to the conclusion that operating current per selector could be called unity and dropped from the calculation. This was found to be the case, as is set forth in a pamphlet issued by the Sandwich Electric Co., which treats of the problem from the mathematical standpoint. It was found that this elimination of the current from the calculation shortened the work greatly. A circuit of 30 stations can be figured by this method in 15 minutes.

Following is a table as an example of the short method. Cut it out and put it in your note book for future reference. It is self-explanatory.

Station Name	Col. 1. Station No.	Col. 2. Miles Between Stations	Col. 3. Loop Resistance 10 Ohms per Mi. for No. 9-B & S. Copper Wire	Col. 4. Col. 1. Multiplied by Col. 3	Col. 5. Excess Figures in Col. 4 Added to Excess at Station Preceding
AB	0	0.	0.	0.	0.
CD	1	2.	20.	20.	20.
EF	2	3.1	31.	62.	82.
GH	3	2.9	29.	87.	169.
IJ	4	5.4	54.	216.	385.
KL	5	4.0	40.	200.	585.
MN	6	3.8	38.	228.	813.
OP	7	2.1	21.	147.	960.
QR	8	3.0	30.	240.	1,200.
Dispatcher	9	5.0	50.	450.	1,650.
Selector resistance					4,500
Bridge resistance at dispatcher's office					6,150
Voltage at line side of dispatching equipment					49.200
Number of selectors on line					9
Operating current					.008
Total current					.072
Resistance of coils in dispatcher's equipment					32
					144
					216
Voltage drop in coils					2.304
Voltage on line side of coils					49.2
Total voltage					51.5

Suggestions for Safety.

The following suggestions for the prevention of accidents are part of a series, published in The Telephone News from time to time. They are of interest to every worker in the telephone field. The suggestions are compiled from accident reports and from comments which have been received from the several divisions of the plant department. Every man is urged to follow these hints when engaged on work to which they apply.

1. Before going to work, make sure that all implements and tools are in first class condition, paying particular attention to ladders, edge tools, rope and tackle. Exchange broken or damaged tools as soon as the defect is found. If it is necessary to use ladders or tools not belonging to you or to the company, inspect them very carefully before using.

2. Use special care in handling torches and furnaces to keep the flame under control, and the wax, pitch, paraffine or solder from boiling over, spilling out or catching fire. When necessary to hoist or lower hot material to or from ladder, pole, roof or manhole, see that everything is clear and that the rope or tackle is safe.

3. Do not drop or throw anything from ladder, pole or roof or into manhole. It may hit someone. Lower it or carry it down.

4. Use care in handling ends of wire and strand. A bad cut and subsequent poisoning may otherwise result.

5. In packing or unpacking boxes, barrels, etc., remove all the nails, screws and metal straps. It takes only a minute, and may save you a badly torn hand.

6. Do not climb on window frames, window sashes, shutters of cornices unless absolutely necessary. Get a ladder on the job.

7. If working in or about elevators or other wells, vats or tanks in buildings, look out for openings in floors, elevator balance weights, etc. Do not start work about elevators until you are *sure* the engineer and the operator know what you are going to do. Keep your work and materials clear of the elevator machinery.

8. Keep yourself, your clothes, work and materials away from all moving machinery. When working near traveling cranes, steam or electric engines and cars, insist upon proper signals being set to protect you.

9. Before starting work in power houses, explain your work to the person in charge and arrange for proper protection. Don't be afraid to wear your *rubber gloves.*

10. If necessary to work from a ladder on slippery floors, icy pavements, against span wires, near moving machinery, on slanting roofs, or with the ladder upright or nearly so, ask for assistance before starting work. Under these conditions there should always be a man holding the foot of the ladder. Don't rest the foot of ladder on the top of a fence, under any circumstances; get a longer ladder.

Santa (Fe) Claus in California.

For efficient service rendered and to show their appreciation, the employes of the Santa Fe system of Redlands, Cal., remembered the operators of the Southwest Telephone Co. with a five pound box of chocolates. The following unique card accompanied the gift:

"As a Slight Expression of the Most
Excellent Services Rendered by
The S. W. Home Telephone Operators,
The Santa Fe Employes Beg to
Offer the Accompanying and with It
Goes Best Wishes.
Santa (Fe) Claus."

Telephone "Masher" a Parrot.

Receiving a call from room No. 647, occupied by Mr. and Mrs. Charles F. Bailey, of New Orleans, the house telephone operator at the Waldorf-Astoria heard herself called "sweety," and then, "Oh, you sassy suffragette," says a New York City item.

She was indignant. She called the chief operator to listen and then they called the house detective. They all heard, "Hello, baby," and, "Hello, cutey." The girl remonstrated and from the voice at the other end came language which cannot be printed. The detective rushed to the room. Perched upon the fallen telephone instrument he found a huge Brazilian parrot, the property of the Baileys. After dislodging the bird and hanging up the receiver the detective fled, pursued by a torrent of abuse from the parrot.

Practical Subjects—Letters and Discussions

As to Rural Rates.

In reply to inquiry in TELEPHONY of January 11, in regard to equalizing rural rates will say that I have been handling quite a number of rural lines for the last four years and the method which I have adopted has given very good results both to the company and to its subscribers. I think it is a just, fair proposition to all. I charge all subscribers the same rate and build all the lines and install the telephones, but if I have to build a long distance to get to the subscriber, I require him to pay me for the material over and above the regular distance and then give him credit for that amount in service at the regular rate. But it is understood that if he does not, for any cause, keep the telephone long enough to take up the amount paid he forfeits it to the company. This protects the company from any loss as to the material required to build the extra line.

Lipscomb, Texas. C. A. McKee.

In TELEPHONY of January 11, I notice a subscriber's request for equalizing rural lines. I will give a plan I have pursued for seven years without a single jar.

I first locate my main line. Then I reach out a half mile each way. If that does not reach the residence of a patron I require him to build the rest of the way. Then I stick to that limit. If a patron lives just 100 yards over the half mile limit I have him build that or pay for it.

By all means stay within your limit. In case two or three farmers live fairly close together, say two miles from your main line, just build a half mile for each telephone. When one builds and maintains more than a half mile of good line for one telephone he engages in a doubtful proposition from a business standpoint.

Now, it may develop that your business will grow and extend out from your town or connecting place that will necessitate more lines to accommodate your people. Of course, if your second or third lines parallel your first you will get no subscribers for the first few miles, but using the same poles for each line will go a long way toward equalizing things.

By all means build every line when it is practical out from your town or central station. Avoid cutting your lines into sections and having switches along the line. Be courteous, patient and accommodating, but firm. J. A. Wright.

Chickasha, Okla. Bill's Creek Telephone Co.

I have noticed articles in your recent issues from parties asking for information and opinions as to the proper charge to be made for rural service, where a special piece of line has to be built possibly a mile or two from the main line. We are, at this time, encountering the same proposition of having to make an equitable charge for this service when, as a matter of fact, it must necessarily have to be reckoned from the units of overhead charges in direct proportion to the investment and cost of maintenance the same as in any other class of service.

In our case we have a No. 10 grounded line extending about 40 miles into the country, which at this time has only four small toll stations and five rural subscribers attached. Our rate for rural service to those adjacent to lines already built is $1.50 per month.

This line was built primarily for toll service, but since this has become unprofitable we must take on rural subscribers. But many of our applicants live some distance from the line, and to add a greater line mileage than we now have to this empty line without a profit coming in on the present investment would simply be going from bad to worse.

The cost of building a mile of line in this country, using No. 12 wire and 4-in., 20-ft. poles, 20 per mile, is approximately $40 per mile. So taking that cost as a basis of calculation the result would be about as follows:

Interest at 10 per cent on investment of $40	$ 4.00
Depreciation at 8 per cent	3.20
Taxes, 2 per cent	.80
Maintenance	1.00
Cost for 1 mile of line service per year	$ 9.00
Instrument and service rental per year	18.00
Cost of yearly rental	$27.00

Should there be more than one subscriber on this piece of line, then the line service charge should be apportioned accordingly and added to the regular monthly rental rate. Of course there may be instances where the regular rental can be furnished for less cost and also, possibly, a cheaper line might be built and the final cost would be less.

In case an applicant would prefer to build his own line to our main line we would permit him to do so, providing he built his line substantially. In this instance we would furnish his station equipment at the regular rate of $1.50 per month. I would like to hear from others who may have tried out this plan.

We also are thinking of equipping our toll stations on this line with direct current generators and polarized bells, which will allow us to handle commercial business without the entire farmer population listening in. It will also keep each class of service by itself. If a toll station desires connection with a rural subscriber the call will have to be placed through central, who will make a ticket on the service.

As to the best kind of battery to use for switchboards will say we discarded the gravity cells two years ago and have since been using the Edison RR type. No more gravity batteries for us.

Assuring you of the great interest and pleasure TELEPHONY is to me each week, I remain WALTER S. ROWE,

Philip, So. Dak. Great Western Tel. Co.

An Aunt's Letters to a Switchboard Girl.

PERSONAL APPEARANCE.

My Dear June:

There is only one reason why I should ever, for a moment wish for the "good old times" before we had the telephone and the picture post card. Can you guess? No. Then I will tell you.

To bring back the lost art of letter-writing—to bring again the courteous, pains-taking "letters—those electric sparks that fly from soul to soul." It is impossible and embarrassing, to all parties concerned, Central as well as others, to attempt to send "soul sparks" over the modern wire.

Two days of sleet make one stay close to a snug fire, and as we are "shut in from all the world without," even a book has not the charm of letter-writing.

You are beginning to wonder what particular direction my hobby will take this time. I am more interested just now, in personal appearance as affected by dress for this reason. We are just on a corner where the pupils of the public schools all pass my window to and from school. It is especially of the young ladies of the high school that I am thinking. And, June, I have fully decided that they are the daintiest in the summer, and the most sensible in the winter of any crowd of girls I have ever known.

Culture means more to them than mere appearance, if

by appearance we mean showiness. In this town, more than any other that I have known, it is the person who counts, not money nor dress that merely stands for money. So, the homely saying, "You cannot tell a book by its binding" is more applicable here than "fine feathers make fine birds."

This is not insinuating at all that there are not times for fine dress, but that it is the suitableness of clothes and place, that must be our aim.

Of course Queen Esther put on her royal robes when she appeared before the king Ahaserus. It is doubtful if plainer apparel would have secured for her the sceptered favor which she so much desired for her people.

Yet, your royal robes, which means your very best that a young girl in your position can afford, would be discordantly out of place at the switchboard.

If calico is the best that a girl can afford, she may appear so fresh and dainty that to her associates it may seem like the line in Evangeline which does not speak of latest styles, but says she was "Wearing her Norman cap, and her kirtle of blue, and the ear-rings brought in the olden time from France, and notwithstanding the ancient style of her clothes, when she had passed, it seemed like the ceasing of exquisite music."

Now I am getting somewhere near the point at which I am aiming. Make your personality dominate your mere clothes. Let your very self mean so much that a friend may talk with you and not be able afterward to tell the exact color or cut of the minutest detail of your dress. If it is neat and suitable such will be the case.

This does not mean your girls are to spurn dress, nor make the office a place to wear out old clothes, and have known some country teachers to do in the schoolroom to the disgust of the pupils! Dress speaks of **prudence** as well as discretion.

I know one girl who is always fittingly dressed, which means plainly but cheerfully dressed. Bright colors belong to girlhood, and He who gave the goodly plumage to the peacock; who painted the rainbow with its varying and prodigal dyes; set the southern sky in its azure depths; gave the birds of the air their colors, such of the gold of the cloud, its rubies, the vermillion and other gorgeous shades all combined, never meant you, June, to be the only dull spot by reason of your adornments.

As your name suggests, and as your birth month that gave you the name, bright and beautiful things are yours by right, as they are every other girl's, if, and here is where the prudence comes in, you can afford them and wear them so they suggest the charm of fitness.

Yes, I know there is a strain of French in your blood, and you and I have noticed how Grandma Green, even now, loves the little fanciful accessories of dress. That is all right too, and if it were not that some one has said that good counsel repeated, returns to enrich the giver. I would have shown signs before this of flagging courage in these habitual lectures.

Here is a new theory I believe, and I am convinced it is true and may some day become practical. I do firmly believe it is a crime, for the merchant to place the unattainable finery so conspicuously before the eyes of the working girl? Why not place them as they do their valuable gems, in secure, or remote rooms, to be displayed only where the money of the wealthy require them?

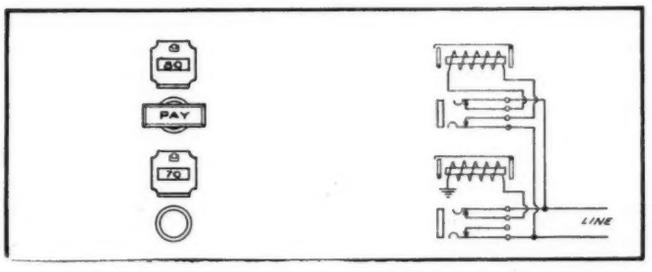
They ought to be placed as far away from the temptations of the working girl as the other places of depravity.

How the continued contemplation of a beautiful garment, begets in the mind of a girl the craving for possession! And do you know, I have known many cases where, in time, the girl became the possessor of the coveted bit of finery—but, at the loss of a good reputation. If these show windows could be shunned, as some superstitious people shun the spectre of the black cat, as an ill omen, the virtue of daintiness and self-adornment need not degenerate into the vice of vanity.

It is still sleeting, so there is no use to try to write till it stops, anyway the school girls are going by and I must watch that merry procession. YOUR AUNT.

Arrangement to Notify Operator of Free Calls.

I will describe briefly a pay station arrangement which may be of interest. The owner of the store in which the station was installed was to have free service over it. We ordered a magneto wall set equipped with ground push-



Circuit Arrangement for Free Service and Toll Drops.

button and a pay station. The line was connected to two drops; the operation of one would designate free service and the other the toll service. The operator always plugs in on free service drop in order to cut off the ground. The sketch shows the arrangement of the drops.

Michigan. H. A.

The Long and the Short of It and Some Others.

Mr. Rhodes stopped me one day as I was driving along in our trouble wagon, which on account of its many loose connections makes more noise than the fire wagon. He said, "There must be something wrong with our line or central. The operators won't answer my wife but they answer me all right." I did not try to explain to him that central could not distinguish his wife's frantic "batting" of the switchhook from that of any one else, but promised to "look it up." It might be well to explain here that Mr. Rhodes is built along the same general plan as was Abraham Lincoln, and that his wife is similar in size to the great president's wife.

The telephone in question was a Kellogg, long cabinet, common battery instrument with one side of the transmitter circuit connected to the transmitter arm. The nut had worked off from the lug and when Mr. Rhodes called central, he would push the transmitter arm up, thereby pulling the wire down on the lug. When Mrs. Rhodes wanted to telephone, she would pull the transmitter arm down and the wire would quietly slip off the end of the lug and leave the transmitter circuit open. After I replaced the nut, Mrs. Rhodes had no difficulty in getting the operator to answer.

We use four-party harmonic ringing on our common battery lines. One side of the converter is grounded and we ring all our bells bridged across the line. I had occasion to move one of the farm sets from one side of the house to the other. After I had moved the instrument, it would not ring. I asked the wire chief for information as to why a telephone should ring on the west side of a man's house and would not ring on the east side. After explaining to him that my line was connected properly; that I had not broken a wire; and that the telephone did not ring on the west side of the house, he remembered an important engagement and said that I would have to hunt my own trouble.

The telephone had a selecting wire whereby it might be used on an eight-party line using the ground for one side of the ringing circuit. The installer has left this wire connected to ground. In moving the telephone I had reversed the line. Before moving it had worked through the grounded side of the converter. I have had this same condition several times since at other telephones.

We recently bought a number of hand telephone sets. They looked and worked so nicely that they went like hot cakes. A bedside telephone was strictly in style and the manager telephoned in another rush order to the dealer. About that time things began to happen. The instruments would not talk. When the trouble was finally located, the transmitter circuit was found to be open. The front electrode was connected to the cord binding posts by a narrow strip of aluminum. This strip was punched at one end and slipped over the brass post on the front of the electrode. Then the enameled transmitter diaphragm was put on and held by a small brass nut. It appears from tests that I have made since that aluminum and brass may appear to be firmly pressed together and yet have no electrical connection.

I have found open and high resistance connections a number of times on another type of transmitter which depends upon a German silver spring to make connection with an aluminum carbon cup. One of the salesmen from this second house persuaded the superintendent of our plant to install a farm line with common battery transmitters. It seemed like a good idea because it would save dry cells.

We placed some of his newest transmitters in eight telephones and put them up in place of the old reliable magnetos. That was about six months ago. When we go out that way fixing telephones now, we take along a sack of candy for the kids and a gun for the dog. At one place I found a small tack hammer hanging beside the telephone. The folks explained, "it seems to stir things up if we tap it a few times before we use the telephone." Putting on good transmitters seemed to relieve the trouble, and our seven mile farm line works fairly well on common "battery."

"Sometimes our telephone sounds like the man at the other end was blowing a cornet right in front of the transmitter," Mr. Edson said to me one day.

I did not tell him what I thought of his idea of a slight noise on a telephone line, but told him "I'll look at your telephone." After looking at it for an hour or so, taking it all apart and examining all the connections, I was about to tell the gentleman that I thought his telephone would be all right, when the thing fairly screamed in my ear. It was just this way. The set was hung on a thin wooden wall, which of itself made a good sounding board. When the ringer gongs started vibrating, it set the transmitter to howling. Then the vibrations would chase each other around so fast that as the man said, it could be heard clear across the room. I deadened the gongs and thus cleared the trouble.

I could write a whole chapter on the different cases of trouble I have cleared by the simple expedient of soldering all connections. A copper to copper joint taped up without soldering is merely a method of doing up a piece of trouble for someone else to find. Joints upon which some of the numerous acid fluxes have been used, when taped up are another cause of trouble for some one. The simplest way to solder an inside connection, copper to copper, is to hold it over a large candle flame, a plumber candle is best, and after the wire is hot apply resin core solder to the wire where it has not become blackened by the smoke.

I found a ringing trouble on a bridging line about three-fourths of a mile from the telephone. In building the line the men had wrapped the wires from this spur around the main line wires with close wraps, applied acid flux and got a nice layer of solder on the outside of the wire. The flux was the only part of the soldering compound that reached the joint. Three or four years after, it made a high resistance joint that could not be rung through.

York, Neb. Rufus Comstock.

One Way of Compelling Attention.

The Missouri & Kansas Telephone Co. has hit upon a forceful method of attracting the notice of the public by utilizing its poles along the main highways for sign posts. One of these signs, shown here, is used on the Kansas City-Atchison road. It is stencilled in blue on the pole and serves at once to point the traveler on his way and to emphasize the fact that the telephone company is in the field. According to the announcement which the company has made, the work will be done pretty generally throughout its territory. a fact which has been acclaimed by automobilists and other drivers. Doubtless other telephone companies having lines running parallel to highways frequented by automobilists and other travelers can make good use of this idea.

Telephone Guide Post.

Some Telephone Troubles.

A telephone was reported to be ringing most of the time. The line tested clear and no cross with other telephone or power wires could be found. A troubleman was sent over the line, but located no trouble and when he got to the instrument, there was apparently nothing wrong with it. The next day it was reported ringing again and then a real search was made.

The instrument was a desk set, with the bell box fastened on the desk, and the following trouble was found. Some machinery was running in the building and the vibrations of the floor caused by its running made the bell tingle on one of the gongs. If a person walked within six or eight feet of the desk his weight would stop the floor vibrations and the bell would be quiet. By placing the ringer on the wall, the ringing was stopped.

One of our toll lines would go short in the afternoon about five or six o'clock and would clear up the next day about nine. The trouble was about twelve miles out and by the time a drive was made to the place, it was clear. After a very close examination was made of the line about this point, it was found that an old piece of rusty wire was thrown upon the wires and rested on the limbs of a tree which was near the line.

The wire was on one side of the line and was very close to the other side. We thought the trouble was caused by one of three things: the line drawing up in the cool of the evening and expanding again in the morning; or the dew bearing down the limbs enough to cause the wire to touch both sides of the line; or the wire was close enough to the other wire so that the dew moistened the rusty wire enough to make the line show the short.

Robinson, Ill. F. E. Drysdale.

Bell, of Canada, Issues New Stock.

The Bell Telephone Co., of Canada, has issued $3,000,000 of new stock. The company's authorized capital is $30,000,000, half of which is outstanding.

Uniform Accounting System of Interstate Commission

Complete Details of Plan Promulgated by Government Body for Use of Every Telephone Company Having Annual Income of Upwards of $50,000—Plan for Smaller Concerns is Now Under Contemplation—System Effective Universally January 1, 1913

137. CORPORATE DEFICIT.—Under this head should be shown the debit balance, if any, in the Corporate Surplus or Deficit account. (See sec. 17.)

LIABILITY ACCOUNTS.

STOCK.

150. CAPITAL STOCK.—This account should include the par value of stock actually issued. In case of the issue of two or more classes of stock a separate account should be provided for each class. Credit to a subaccount entitled "Installments on Stock Subscriptions," the amount of installments paid on subscriptions for capital stocks; when certificates of stock are issued for installments paid, this subaccount should be cleared and the par value of the stock so issued should be credited to the account appropriate for such stock.

The amounts included in this account, or in the subaccounts, should be subdivided so as to show (1) the par value of certificates issued and outstanding and not held by the company, its agents or trustees, and (2) the par value of certificates (pledged or unpledged) issued by the company and held by or for it. In stating the accounts on the balance-sheet statement, the latter amount should be deducted from the total in order to show only the par value of the certificates actually outstanding in the hands of the public at the date of the balance-sheet statement. (See sec. 5.)

NOTE A.—By *capital stock*, as the term is here used, is meant those securities which represent permanent interests in the corporation, or interests which, if terminable, are so only at the option of the corporation. Stocks are classified as—

Common stocks, those whose claims in the distribution of dividends are subordinate to the claims of all other stocks.

Preferred stocks, those having a first claim upon those dividends which may be distributed.

Debenture stocks, those issued under a contract to pay a specified return at specified intervals.

No two stocks should be considered of the same class unless they are equal in their dividend or interest rights, their voting rights, and the conditions under which they may be retired.

NOTE B.—If any issue of stock is for money, that fact should be stated; and if for any consideration other than money, the person to whom issued should be designated, and the consideration for which issued should be described with sufficient particularity to identify it. If such issue is to the treasurer or other agent of the company, to be by him disposed of for the benefit of the company, that fact and the name of such agent should be shown; and such agent should, in his account of the disposition thereof, show the like details concerning the consideration realized thereon.

NOTE C.—If the fair cash value of the consideration realized upon the issue of any amount of stock is greater or less than the par value of such stock the difference should be credited or charged to an appropriate discount and premium account, and corresponding reference thereto should be contained in the entry relating to such stock in the stock account. (See sec. 6.)

151. STOCK LIABILITY FOR CONVERSION OF SECURITIES—This account should include the par value of stock that the company has agreed to issue in exchange for securities of constituent companies whose physical property has been acquired under such agreements, but whose securities have not yet been surrendered for exchange.

152. PREMIUMS ON CAPITAL STOCK.—If the net of the balances in the discounts and permiums accounts for all classes of capital stock sold or exchanged is a credit balance, the amount should be stated in this account. (See sec. 6.)

LONG TERM DEBT.

153. FUNDED DEBT.—This account should include the par value of funded debt actually issued or assumed by the company. In case of two or more classes of funded debt a separate account should be provided for each class. Credit to a subaccount, entitled "Installments on Funded Debt Subscriptions," the amount of installments paid on subscriptions to funded debt issues. When bonds, notes, or other evidences of indebtedness are delivered, this subaccount should be cleared and the par value of the funded debt so issued should be credited to the account appropriate for such funded debt. The entry in any account should show also the purpose for which funded debt is issued.

The amounts included in this account, or in the subaccounts, should be subdivided so as to show (1) the par value of funded debt securities issued or assumed and outstanding and not held by the company, its agents or trustees, and (2) the par value of funded debt securities (pledged or unpledged) issued or assumed by the accounting company and held by or for it. In stating the accounts on the balance-sheet statement the latter amount should be deducted from the total in order to show only the par value of funded debt securities actually outstanding in the hands of the public at the date of the balance-sheet statement. (See sec. 5.)

NOTE A.—By *funded debt*, as the term is here used, is meant the par value of all bonds, notes, and other evidences of indebtedness (except open accounts for advances) which, by the terms of the creation of the debt, do not mature until more than one year after the date of such creation. Funded debt is classified in accordance with four principal characteristics, viz., (1) mortgage or other lien or security therefor; (2) rate of interest; (3) interest dates; and (4) date of maturity. No two amounts of funded debt should be considered of the same class unless agreeing in all four of the above characteristics, except that any issue of securities agreeing in the first three characteristics but maturing serially may be treated as of the same class. Where any portion of the funded debt rests only on the general credit of the corporation and is not specially secured or supported by lien of any character, it should, for the purpose of these accounts, be known as a debenture. Debentures include promissory notes unsecured by mortgage or other lien, and securities commonly known as plain bonds.

NOTE B.—If the consideration recieved for any issue of funded debt is any thing else than money, the entry should show the principal to whom issued and should describe with sufficient particularity to identify it the consideration actually received for the issue. If the issue is in any case to an agent of an undisclosed principal, the name and business address of such agent and the fact of his agency should be shown in the entry.

NOTE C.—If the fair cash value of the consideration realized upon the issue of any amount of funded debt securities is greater or less than the par value of such securities plus the accrued interest, the difference should be credited or charged to an appropriate discount-and-premium account, and corresponding reference thereto should be made in the entry relating to such debt in the funded debt account. (See sec. 7, p. 14.)

154. RECEIVERS' CERTIFICATE.—When any receiver acting under the orders of a court of competent jurisdiction is in possession of the property of the company and under the orders of such court issues certificates of indebtedness chargeable upon such property, the par value of such certificates should be credited to this account. Interest accruing upon such certificates should also be credited monthly to this account, and when paid should be charged to this account.

155. ADVANCES FROM SYSTEM CORPORATIONS FOR CONSTRUCTION, EQUIPMENT AND BETTERMENTS.—This account should include advances from controlling, affiliated, controlled, and subsidiary corporations to enable the accounting company to pay for construction, equipment, or additions and betterments

if such advances are of a permanent nature (i.e., if there is not an understanding that the advances are to be repaid within one year), or if it is understood and intended that a reimbursement shall be made by the issue of the securities of the debtor corporation.

NOTE A.—Gifts from system corporations without expectation of reimbursement should not be credited to this account but to account No. 401, "Miscellaneous Additions to Surplus."

NOTE B.—Temporary advances on open accounts from system corporations and such advances for purposes other than construction, equipment, or additions and betterments should be included in account No. 160, "Accounts Payable to System Corporations."

WORKING LIABILITIES.

156. JUDGMENTS UNPAID.—When any judgment of indebtedness is rendered against the company by a court of competent jurisdiction, or any fine or penalty requiring the payment of money is assessed against the company by such a court, and no appeal accompanied by stay of execution has been taken therefrom within the time allowed by law for such appeal, the amount of such judgment, fine, or penalty should be credited to this account, and the entry should designate the action or suit as a consequence of which such judgment is pronounced or such fine or penalty assessed. The designation of the action or suit should show what court, the term thereof, the parties, and the character of the action or suit. Interest accruing upon any such judgment should be credited monthly to this account. When payment is made this account should be charged.

NOTE.—In case of appeal and affirmance in whole or in part, from which judgment of affirmance a further appeal lies, the same rule shall apply as upon entry of original judgment.

157. BILLS PAYABLE.—This account should include the par value of all notes, drafts, and other evidences of indebtedness, issued or assumed by the company, and which are payable on demand or within a time not exceeding one year.

NOTE.—When loans from system corporations for construction purposes are evidenced by demand or short-term notes intended later to be exchanged for other securities, the amount of such loans should be included in account No. 155, "Advances from System Corporations for Construction, Equipment, and Betterments."

158. AUDITED VOUCHERS AND WAGES UNPAID.—This account should include the amount of audited vouchers or accounts and audited pay rolls unpaid on the date of the balance sheet. Include also the amount of unclaimed wages and outstanding pay and time checks issued in payment of wages.

159. SUBSCRIBERS' DEPOSITS.—Credit to this account, as such deposits are made, all cash deposited with the company by subscribers for telephone service as security for the payment of bills. Deposits refunded should be charged to this account and credited to cash. Deposits applied to uncollectible telephone bills should be credited to the account of the subscriber and charged to this account.

160. ACCOUNTS PAYABLE TO SYSTEM CORPORATIONS.—This account should include the amounts owed to controlling, affiliated, controlled, or subsidiary corporations on open accounts other than those provided for in account No. 155, "Advances from System Corporations for Construction, Equipment, and Betterments."

161. MISCELLANEOUS ACCOUNTS PAYABLE.—This account should include all amounts owed to miscellaneous creditors on open accounts and not provided for elsewhere.

162. MATURED INTEREST, DIVIDENDS, AND RENTS UNPAID.—This account should include interest matured and unpaid on loans and funded debt of the accounting company, and of other companies, when payment has been assumed by the company; rents due and unpaid on property held under leases; and dividends due and payable on capital stock but unpaid, uncalled for, or unclaimed at the date of the balance sheet.

163. MATURED FUNDED DEBT UNPAID.—This account should include the amount of matured mortgage, bonded, and other funded debt payable, but not yet paid, including bonds drawn for redemption, through the operation of sinking and redemption fund agreements.

164. SERVICE BILLED IN ADVANCE.—When bills are made for service to be rendered in future months, and the amount of the bills is included in account No. 118, "Due from Subscribers and Agents," or other asset account but not in the revenue accounts, the proportion of the bills applicable to future months should be credited to this account. As the term expires for which the bill is made, the appropriate revenue account should be credited and this account debited with the amount applicable to the current month. When toll coupons or tickets are sold, this account should be credited with the amount representing the service to be rendered. At the end of each month this account should be charged and the appropriate revenue accounts credited with the amount of coupons and tickets (less the discount, in case coupons or tickets were sold at a discount) redeemed during that month.

165. OTHER CURRENT LIABILITIES.—This account should include the amounts of all current liabilities which are not included in any of the foregoing accounts.

ACCRUED LIABILITIES NOT DUE.

166. TAXES ACCRUED.—This account should include the amount of taxes accrued and properly charged against income or other accounts in excess of the amount of taxes paid. (See sec. 16.)

167. OTHER ACCRUED LIABILITIES NOT DUE.—This account should include the amount of interest on loans and funded debt, including interest on funded debt assumed, and rents under leases accrued to the date for which the balance sheet is made but not due until after that date; dividends on stock declared prior to the date of the balance sheet but not payable until after that date, and other liabilities (except taxes) that have accrued to the date of the balance sheet but not due until after that date.

NOTE.—The interest accruing on any judgment against the company or upon any receivers' certificate should be credited to the account to which such judgment or receivers' certificate stands credited.

(To be continued.)

Introduce Drastic Legislation in Nebraska.

Representative Fuller of Seward county, Nebraska, has introduced house bill No. 3, in the Nebraska legislature providing that counties may levy a tax not to exceed two mills, or issue bonds not to excess of 2½ per cent. of total assessed valuation, for the purpose of erecting or purchasing and operatnig telephone systems. He has also introduced house bill No. 24, providing that telephone poles may be set on the boundary line of country roads instead of six feet inside. Representative Schuapp of Gage county is sponsor for house bill No. 45, making it unlawful for telephone companies operating in the same city or county to merge.

Interconnection in Pennsylvania.

The Pennsylvania Railway Commission has declared in favor of legislation compelling telephone companies to interchange service so that, for an equitable toll charge, all telephones within operating distance shall be accessible to all telephone subscribers. Such legislation is already in form to be presented to the present Pennsylvania legislature and it is strongly supported.

The Railroad Commission has already declared such interconnection to be the law of the state, as contained in the state constitution, but the commission appears to have been without power to enforce its decision in the matter.

The Telephone Inspector and the Troubleman

Continuation of a Series of Articles Begun in the September 7 Issue of Telephony—They Deal in an Elementary and Explicit Manner With Many of the Problems Encountered by Telephone Men in the Operation of Small Exchanges

By A. E. Dobbs

GEORGE HAS SOME FUN WITH WILL.

"Come here, Will," George called a few minutes later, "I have a generator that will not throw the drop. See if you can find out what is the matter with it."

Will tried the generator on short circuit—it rang up clear and strong. Then he tried it on another telephone, but could not get a ring. He tested the pull of the magnets as he had seen George do, but they seemed all right. Then he placed his fingers across the terminals of the generator, and the current seemed strong enough, much stronger in fact than some he had put out. Then he rang an open circuit, and the machine tested "clear." Then he examined all the wire connections and could find nothing amiss. He got red in the face and began to lose his temper, nor was he soothed in seeing that George was watching him with an amused smile.

"Gee, whillikens!" he finally burst out at George, "if you think you can fix this, try it yourself, and don't stand back there laughing at me. I've done the best I could."

"Yes," answered George, "you've done very well indeed for a novice, but don't lose your temper. When you do that, you get rattled and it interferes with your reasoning powers."

"Well, you're no saint yourself," retorted the exasperated Will, "for I've seen you get mad more than once."

But George was in a good humor, and didn't notice this outbreak, as he ordinarily might have done.

"That will do," he said. "Take a day or two to think it over, and see if you cannot find that trouble. Meanwhile, we will turn our attention to some of these other instruments, and here we have a tough job.

"Now, you had better bring all those diagrams I gave you to copy, for, while you should follow the same plan, as far as possible, as you did in those, yet there are differences in the arrangement of the generator wiring that will necessitate some changes in the wiring to the shunt spring contacts. There are many ways of making shunts, the main idea being to throw a loop around the armature of the generator, in order to cut its resistance out of circuit."

"What is the resistance of a generator armature," asked Will.

"Well, it varies considerably among different manufacturers, and, according to the purpose for which it is to be used, runs from 100 to 1,000 ohms," replied George.

"Why not ring right through that resistance, then, as the generator will ring through 10,000 ohms?" queried Will.

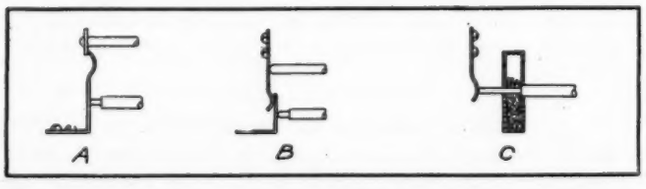


Fig. 41.—Methods of Breaking Generator Shunt Connections.

"Because," answered George, "although the measured resistance is only, let us say 500 ohms, yet the effect upon the current is to 'kick back' into the line an opposing current nearly as strong as the original, so that a 10,000-ohm generator, ringing a bell through another armature would give a ring more like it was ringing through at least 9,500 ohms. This shows that the 'kick' of the armature would equal about nineteen-twentieths of the current, or say nine-tenths. That is the reason you cannot ring through a bridging coil in series."

"Say," almost shouted Will, "that instrument over there—

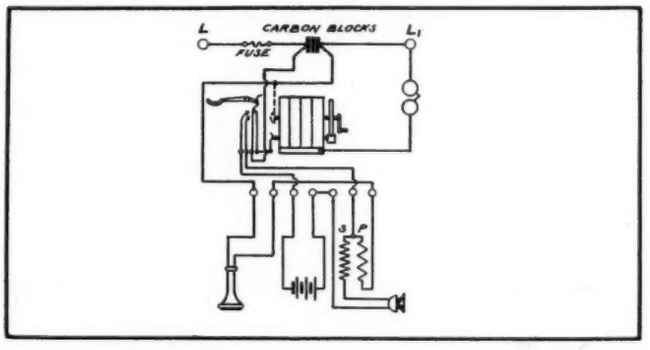


Fig. 42.—Wiring of a Magneto Set.

I put a new ringer coil in it. Can it be that I got hold of a high resistance coil?"

"Try it and see."

"Let me see," ruminated Will. "If I throw a shunt around that ringer it ought to throw the drop, had it not?"

"Try it and see," again replied George.

Will did try, and the test drop fell promptly, almost at a touch of the handle.

"Then that must be a 1,000-ohm coil?" hazarded Will, questioningly.

"Yes," answered George, "though it has a small pair of coils, they are wound with fine wire and their resistance is 1,200 ohms. Change those coils and you will find that instrument all right. Now, since you have found that trouble yourself, you ought to remember it much longer than if I had found it for you.

"But I started out to tell you something about shunts." Here George hastily made several pencil sketches, and turning to William, he continued.

"In this drawing (Fig. 41-*A*) we have a wheel mounted on the end of the shaft, which breaks contact whenever the generator crank is turned.

"In the next one (Fig. 41-*B*) is a different kind of a spring that is also opened by a movement of the shaft.

"In this sketch (Fig. 41-*C*) we have a hollow wooden wheel mounted on the end of the armature shaft, so as to cover both the shaft proper and the end pin. This is not used now-a-days. The hollow wheel is half filled with copper clippings. When the armature is at rest, these clippings lie against both the shaft and the end pin, and make a short circuit across. When in motion the clippings fly away from the center to the outer edge and so leave the center pin free and the armature in circuit."

"By the way," George resumed, after glancing around the room, "there was an instrument brought in yesterday. I would like to have you trace the circuits and make a diagram of them for future refernce."

Will, in the course of the next hour, drew up a sketch (Fig. 42). In tracing out the circuit he found the line passed into the box through a fuse and past a carbon block lightning ar-

rester. George noted one objection to the arrangement, that the fuse, and in some cases, the carbon blocks, would be likely to be a source of trouble unless the fuse is very heavy, say two amperes. The series and bridged sets of this type were just alike except for the ringers. The bridged bells had, in addition, a shunt around the ringers, indicated by the dotted line at the left of the generator.

GEORGE PRODUCES HIS BOOK OF DIAGRAMS.

"Here," said George, producing a book which contained numerous sketches, "I have diagrams of the instrument wiring of nearly all the principal companies in this part of the country. You can take it and study them, but first we will look them over together.

"For fear the diagrams may not be quite clear to you, I want to call your attention to two or three symbols in common use. When you see those toothed lines placed opposite each other, that means an induction or repeating coil. When you see a single one of these by itself, however, that means a resistance coil, or perhaps a resistance without the coil. Those circles connected by a link mean a polarized bell or ringer. When you see a straight line ending in an arrow point, it means a switch contact. The rest is easily understood.

"I have been around this plant pretty well and have been ordering new parts where new parts were needed in order to save buying instruments out and out. Before I get through here, I hope to see all the instruments of one or two patterns, and work off these instruments on other towns as fast as we can. Still we can make many of them as good or better than new, for we can get better material now than two or three years ago."

WILL GETS HIS INSTRUCTIONS.

"Now," went on George, " I have given you these diagrams, and as I have other work to look after, you can proceed to wire up the instruments when you have nothing else to do, and I will help you as I get time. First start in on those old telephones and fix them up. Be sure to do a neat, clean job, for I don't want anything to go out looking as though it had been done by a lot of careless boys, like some instruments we have here.

"Now, let me see—first you will need some tools for this work. You can use those in my kit if you like, but don't you break any of them. Be sure to gather them up and put them away at night. But wait a minute, I will see the manager and persuade him to buy you an outfit."

George went inside, and in a few minutes came out with an

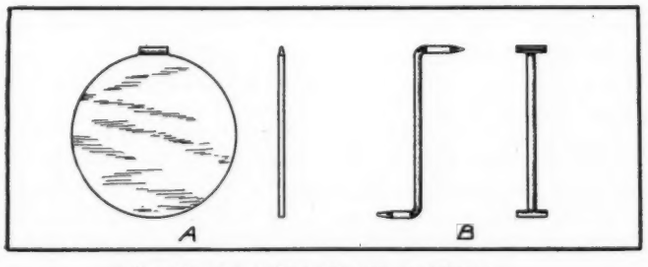


Fig. 43.—Some Special Screw Drivers.

order for the following tools, which he directed Will to take to the hardware store and get filled:

1 pair 5-in. diagonal cutting pliers.
1 pair, 5½-in. long-nosed pliers.
1 4-in. screw driver.
1 6-in. screw driver.
1 hand drill with 8 drills in handle.
1 spiral screw driver.
2 flat files, one large and one small.
1 8-in. ratchet brace.
4 wood bits, sizes ¾, ⅝, ½, and ¼ in.
1 small bench vise.
1 hack saw frame with a dozen 12 in. blades for use in it.

"Now," said George, when Will returned, "you have a very complete outfit and the tools on that list are charged up to you. If you lose or break any of them, you will have to replace them. I will also give you two more tools to add to the list. I made them myself as screwdrivers for working in close corners. One, as you will see (Fig. 43-*A*) is simply a watch case opener with the corner filed down to a screw driver edge. The other (Fig. 43-*B*) was made in a blacksmith shop of a round steel rod formed in the shape of the letter *S*, the ends of which are forged flat and filed to an edge. You will find both of these tools very useful. Finally you always want to have with you a roll each of Okonite and Manson tape."

(To be continued.)

Los Angeles' Telephone Record.

There were 17,000 more telephones installed by the two companies in Los Angeles, Cal., during 1912 than in the previous year. The following figures show the yearly net gain in the number of telephones installed by the Pacific Telephone & Telegraph Co. in Los Angeles in the past eight years: 1905, 5,985; 1906, 5,115; 1907, 2,016; 1908, 3,730; 1909, 5,312; 1910, 3,133; 1911, 4,064; 1912, 8,117. These are the increases in the number of private branches installed in apartment-houses and business establishments in the last four years: 1909, 100; 1910, 121; 1911, 175; 1912, 239. Some of these branch exchanges have from 50 to 300 private telephones.

The statement given out by A. B. Cass, president of the Home Telephone & Telegraph Co. is quite as interesting. The net gain in the number of telephones installed by this company in the last five years is as follows: 1908, 1,533; 1909, 5,222; 1910, 6,705; 1911, 5,051; 1912, 9,000. The number of daily local calls over this system increased from 320,000 in 1908 to 665,000 in 1912.

"It indicates unusual business activity," said Mr. Cass recently. "Our business telephones average 40 calls a day, and some of them go as high as 60 calls a day. The number of calls over the telephones in New York City average nine per day for each telephone, but in Los Angeles it is 23 calls per day over each telephone.

"We have increased the size of our switch board until it is said to be the largest of its kind in existence. When our engineers, in 1907, installed our manual switch board that takes care of the private branches they assured us that it would be large enough to handle the business for years to come but we have since had to double its size."

Wisconsin Association to Meet Next Month.

The Wisconsin State Telephone Association will hold its annual meeting at Madison, Wis., on February 12 and 13. This is expected to prove the most interesting convention ever held in Milwaukee.

Arrangements have been made with the Park Hotel, which will be headquarters for the association, to make reservations for all exhibitors on the second floor, providing the management is notified before February 6. P. J. Weirich, secretary of the association, notifies TELEPHONY that the program will be ready for publication next week, and that it will be a most interesting one

Heavy Business at Elkhart.

Thirteen telephone calls a minute were answered by the Home Telephone Co.'s operators at Elkhart, Ind., during 1912. A total of 7,031,232 calls were answered on week days and 817,496 on Sundays. Over 811,000 connections were given over the free service lines to points outside of Elkhart and 30,489 long distance calls were recorded. The local calls during the year numbered 6,642,939 according to the manager's report.

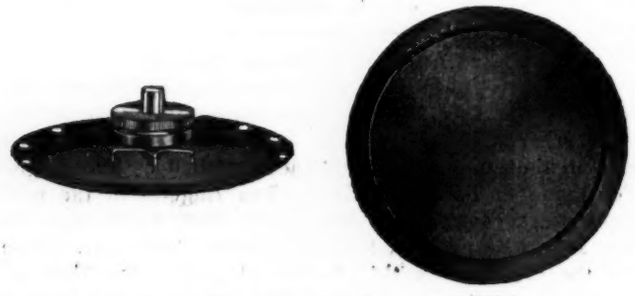
From Factory and Salesroom

Conventions: National Assn., Chicago, February 18, 19, 20; Minnesota Assn., St. Paul, January 28, 29; Wisconsin Assn., Madison, February 12, 13; Vermont and N. H., Wells River, Vt., January 28

The Gottschalk Transmitter.

Three patents recently issued are the final ones in a series of some 14 or 15 United States patents, granted to Felix Gottschalk, 99 John street, New York City, for improvements in telephone transmitters.

The instrument embodying these improvements is said by



Figs. 1-2.—Diaphragm Cell—View Without Guard.

experts to possess so many advantages over the usual types and to be of such unique and simple construction as to be worthy of extended description. Physicists, such as Tyndall and others, have found that the places of greatest vibration in a circular diaphragm are at a point midway between the center and the edge. It was also found that if the diaphragm were tightly clamped at its periphery, the central or undamped portion would be peculiarly susceptible to vibratory impulses.

In the ordinary transmitter, the point of contact between the resistance cell and the diaphragm is usually at the center of the latter. The diaphragm, not being securely clamped at its periphery, would tend to wobble, with the result that heavy damping springs had to be employed. Furthermore, owing to the diaphragm being loose or, at the best, damped by means of soft rubber packing at the edge, annoying overtones would be set up. These were only eliminated by making the diaphragms of aluminum or some other dead metal.

For years it would seem that transmitter designers followed after one another without attempting to make any changes whatever in the construction of the diaphragm itself, or the means of connecting the cell to it, but confined themselves to refining and perfecting the cell structure, which, although a very important part, is not of as much importance from an acoustic standpoint as is the diaphragm.

It remained for Mr. Gottschalk to thoroughly investigate and perfect the diaphragm as he has done. Such investiga-

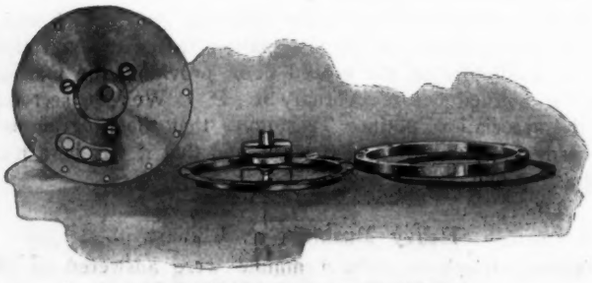


Fig. 3.—Transmitter Disassembled.

tions are very difficult because sounds must be compared by the ear alone. There is no instrument available. Just exactly what the motion of a telephone diaphragm is remains unsolved.

At the annual meeting of the A. I. E. E., at Boston, this year, none of the 59 papers presented created more interest than that of Prof. Whitehead's on the oscillations of the telephone diaphragm. In this it was claimed that the diaphragm has two distinct motions, one superimposed on the other; one consisting of circular nodes and the other of oblique or diameter nodes. In the Gottschalk transmitter, provision is made to utilize the maximum impulses of each set of vibrations.

Fig. 1 shows the diaphragm with cell attached thereto. It will be noted the diaphragm is pan-shaped. It is made from phosphor bronze, which is rolled or tempered, the outer surface being perfectly smooth and unbroken by projecting screws or nuts. It is, therefore, free to vibrate like a drum head and presents a smooth sanitary outer surface, as shown in Fig. 2. The cell is attached to the diaphragm by means of a spider-shaped member which is carried by, but insulated from, the front electrode stem. The tips of the legs of this spider are soldered to the inner surface of the diaphragm. This cell with its diaphragm is then dropped into a cavity formed in the back casing, a ring of special packing is placed around the outer edge of the diaphragm and a clamp ring is secured to the back casing by means of screws, the various parts being shown in Fig. 3. A connection is made before the instrument is finally put together between the stem of the front electrode and an insulated terminal carried on the casing, the same as the connection used in the standard Bell transmitter.

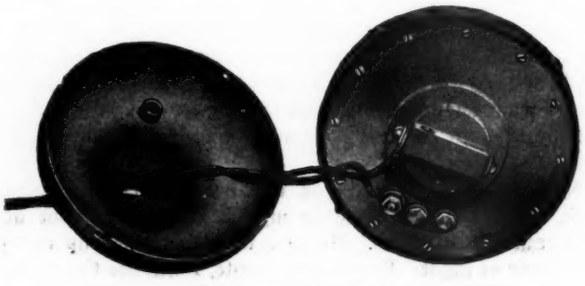
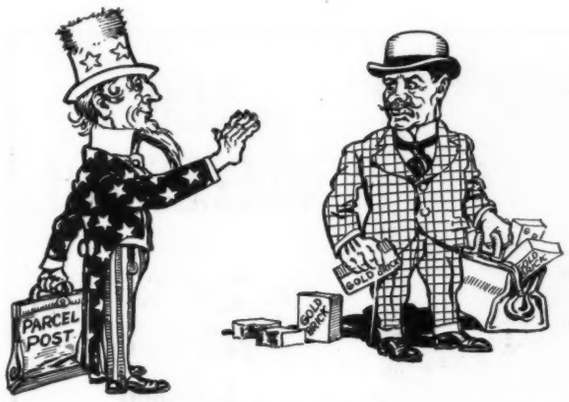


Fig. 4. Rear View, Showing Terminals.

It will now be seen that the cell is enclosed in an air-and-water-proof chamber through which nothing can penetrate, as the back of the instrument is solid metal, the front is closed by the diaphragm and there is a water tight packing between the two. The unusual adjusting screw for the stem of the cell is one point, however, where water might enter, so this screw is made headless and so short that another screw with a washer of packing material around its head can be placed in the hole above it. The result is the transmitter as shown in Fig. 4, which is absolutely waterproof. It can be immersed in water for an hour, or in fact for any length of time within reason, without being affected in the slightest. It will be noted that the back shell is not for the purpose of preventing ingress of moisture, but simply covers up the terminals and affords the means of mounting the instrument on the telephone.

This transmitter affords a perfect solution for the troubles met with in mine or railroad work, police boxes, testing sets, and other exposed locations and, being water-proof, it may be used in the operating rooms of hospitals, as it can be immersed in a sterilizing solution without injury. As the cell is in an air and water-tight compartment it cannot deteriorate and, being directly surrounded by the metal back and the interior air space reduced to a minimum, the heat is rapidly conducted



The Post Office Department Tries to Protect

the public from those who sell "false securities," but there's no department to protect people from a false *sense* of security—

For example—the man who uses iron ground rods can feel secure for a while. But, bye-and-bye, the rod rusts away, beginning at the bottom end, which is out of sight.

The top end, which he can see, still looks good and so he feels safe. But one small thunder storm may jolt *him* when it hits his line.

Copper Clad ground rods are like Government bonds, in that their value don't change and no matter what happens, they give real security—for Copper Clad Steel don't rust.

They don't cost like Government bonds, though.

Trade Mark "Weld Clad"

Duplex Metals Company

Chester, Pennsylvania

CHICAGO OFFICE
853 Peoples Gas Bldg.

NEW YORK OFFICE
30 Church Street

In buying dry cells what do you pay for? Amperage or Service?

We **could** make Red Seal dry batteries test higher but we wouldn't dare to guarantee them.

We **could not** make Red Seals more reliable, efficient or long-lived and that's why we do guarantee them absolutely to give satisfaction on either phone work or ignition.

If you want a general utility cell to use at a saving or to sell at a profit write.

Guarantee

We will *credit* account, *replace* batteries or *refund* amount paid for batteries including transportation charges if they do not prove satisfactory.

Manhattan Electrical Supply Co.

New York Chicago St. Louis

Please tell the Advertiser you saw his Announcement in TELEPHONY.

Settle Your Doubts Right Here

The Electric Clock Telephone

No. 50 Series magneto ELECTRIC CLOCK 'phone $14.50
No. 50 Bridging 5-bar ELECTRIC CLOCK 'phone $17.50

Requires no additional equipment to install—no master clock—no extra wires—no extra batteries. There is absolutely **nothing** additional to do; just attach the telephone to your line in the regular way, set the clock to the right time and it starts itself, and does all the rest **itself** without **any** attention of **any** kind from **anybody.**

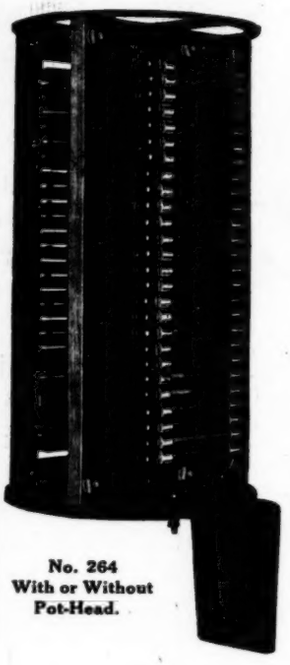
Any business man will pay extra rental for an **electric clock** 'phone—a clock for his office or residence he does not have to wind.

LOOK AHEAD into the future and figure your profits for NEXT YEAR.

Your dollar will go TWICE as far and DOUBLE your satisfaction when spent for QUALITY.

You need our NEW CATALOGUE FOR YOUR REFERENCE

Swedish American Telephone Mfg. Co.
5235 East Ravenswood Park Avenue, CHICAGO, ILLINOIS



No. 264
With or Without
Pot-Head.

100% SUCCESSFUL

—is our—

No. 264 Can Top, Pole Cable Terminal

Equipped with long tubular fuse and carbon protection in sizes of from 10 to 60 pairs.

A Protector that Protects. Efficient, reliable, durable, economical and desirable.

Get our prices and further information in Bulletin No. 3.

LaFayette Electric & Mfg. Co.
LaFayette, Indiana

Patent Pending

"Hy-Po-Stat"

The All Metal and Porcelain Cable Protection
This is the terminal that

'Protects Your Cables"

and makes your investment a permanent one.
For further information ask your jobber, or write

The Royal Electric Company
SIDNEY, OHIO

Please tell the Advertiser you saw his Announcement in TELEPHONY.

away and the transmitter will stand a much greater overload than the usual type.

A careful inspection of the records of any telephone company will show that the annual maintenance charges due to broken mouthpieces is a considerable figure. In the case of desk sets, the mouthpiece being figured at five cents and the cost of time and car fare in putting it on at 20 cents, the year's charges will often amount to 50 cents, or nearly one-half the cost of the transmitter. This heavy charge the Gottschalk instrument eliminates absolutely, the place of the mouthpiece being taken by a flat perforated metal guard, as shown in Fig. 5, which is unbreakable and easily cleaned. Such a guard cannot be used with the ordinary transmitter, as the ordinary diaphragm is not sufficiently sensitive, but, owing to the increased sensibility of the Gottschalk instrument, this device can be employed.

With the Gottschalk mouthpiece the tendency of the user is to talk closer to the instrument. Most people naturally object to putting their mouths very close to the usual unclean mouthpiece, especially those found on public telephones in hotels, railway stations, booths, etc. With the Gottschalk instrument, however, this feeling does not exist because, the guard being metallic and almost flat, the slightest suspicion of dirt is readily seen. For this very reason the instrument is cleaned frequently, with the result that the user unconsciously gets close up to the guard and better average transmission results.

And the Gottschalk transmitter is sanitary. The time will come when the ordinary mouthpiece with its millions of germs will be prohibited by law, the same as the public drinking cup is now widely prohibited. There is a decided trend of public opinion towards sanitation in connection with everything used by the public. Witness the recent installation of a machine for washing soiled money in the United States Treasury, the laws regarding the washing of ice before it is placed in the

Figs. 5 and 6.—Metal Guard—Transmitter Showing Drain Hole.

coolers in railroad trains, the prohibition of spitting in public places, etc.

The average public telephone in a closed booth is not only offensive, but it is almost as much a menace to the public health as is the average public drinking cup. In fact, it is more so, because the drinking cup is washed occasionally and the telephone never. The Gottschalk transmitter is an effort to improve this condition, as it is a sanitary instrument throughout Being water-proof, it can be as easily washed as a glass tumbler and there is no reason why the outside of it should not be washed every day.

Figs. 6 and 7 show the instrument complete with shell, Fig. 6 showing the large drain hole that is provided so that any water or moisture may drain off the diaphragm. The diaphragm itself, being of bronze, is unaffected by the corrosion usually so fatal to the aluminum diaphragm, which seldom lasts more than three or four years, even when protected by the thin sheets of celluloid or oiled silk commonly used. These last are not only very dirty, but seriously impede transmission.

The Gottschalk transmitter has been thoroughly tested electrically and mechanically in several of the manufacturers' and college laboratories. The mean results show the instrument in its commercial form to average from three to seven miles better, in terms of standard cable, than instruments of standard makes as heretofore constructed. Much of the development work on the transmitter is done in the laboratory of R. H. Van Deventer, of Sumter, S. C., the well-known telephone engineer, who has a very complete system and equipment for making transmitter tests. The result of these investigations, which included extended experiments as to the water-proof qualities of the instrument, confirm the inventor's claims and, after over five years spent in refining and perfecting the device, it is now ready for the market.

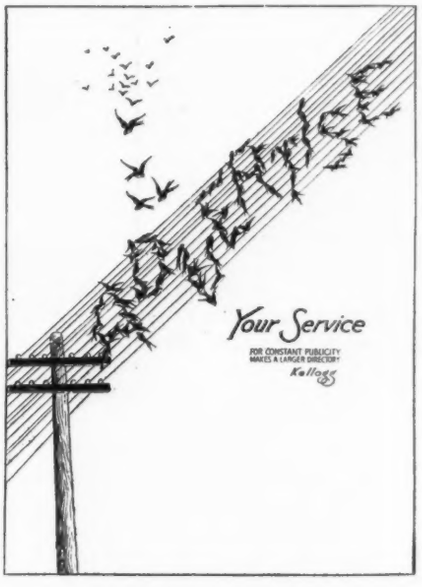
The Gottschalk transmitter will be exhibited at the National

Fig. 7.—Gottschalk Transmitter Complete.

Independent Telephone Association's convention, in February, at Chicago, and telephone men are cordially invited to inspect the device, especially those desiring an instrument to meet conditions where other instruments have failed.

Advertise Your Service.

Real co-operation, that is the idea received upon reading through the latest Kellogg Switchboard & Supply Co. bulletin, entitled "Advertise Your Service." While this 24-page bulletin is simply and unpretentiously made up, every page contains a valuable suggestion to the telephone man who is interested in a growing exchange.



A "Bird" of a Booklet.

As the title suggests, the key note is "Advertise your service, for constant publicity makes a larger directory." Beginning with the introductory paragraph illustrating some early Kellogg advertising cuts, the bulletin emphasizes the importance of assistance in advertising and the importance of "news copy." Local features are played up in advertising cuts to interest the people of a town in their most important institution, the telephone exchange. There is a page of plates familiar to readers of telephone journal advertising, which can be combined with the local news stories in the home paper. Then, following, are a dozen or more original and uniquely illustrated advertising plates.

Covering the more important needs of the telephone from the standpoint of the subscriber, such forceful titles as, "Are You On the Map?" "Phone and Oppor-

tunities," "Stop! Don't Cross the Street," "Is Your Home an Oasis?" show that these are messages that will be read. Most of them are suitable for every size exchange. There are paragraphs on "Selling Telephone Service," "The Value of Repetition," "The Need of Your Service," "A Word About Cuts," "The Telephone Directory," "The Local Bradstreet."

The last four pages show some of the well known Kellogg plates, among them being the attractive farm telephone scene, "Neighborhood News," the cartoon, "Some Modern Pirates," illustrating the "nerve" of the telephone borrowers. Notes on lantern slides and miscellaneous advertising cards and novelties. Four of the new "Way to Talk" half-tones appear on the last page.

This book shows not only the aggressive, up-to-date spirit of the Kellogg company, but its policy of real cooperation with its customers in the way of helpful sales service.

A copy of this book will be sent to those interested. As the edition is limited, it will be wise to send for your copy at once.

The Brach Hydro-Ground.

Good grounding is the ability to get the best available results from the soil. It means the securing of the lowest resistance contact between the conductor or ground wire and the earth itself, and it is only accomplished by a proper choice of location and method of grounding. When possible, grounds are placed in moist earth or located in soil high in mineral value, having a natural advantage toward high conductivity. However, conditions like this are not easily found and it is the usual practice to adopt a method of grounding which will make the best of existing conditions and afford reliable efficient conductivity.

A New Type of Ground.

Three things are essential to make low resistance contact with earth. They are:

1. Moist earth.
2. A substantial area of metal surface of the grounding device should be exposed to the earth.
3. Firm contact should be made with the earth and grounding device.

To aid in securing these necessary conditions, the "Brach Hydro-Ground" is submitted. Several features have been incorporated in the design that will, it is claimed, take care of conditions known to be essential to good grounding.

To secure the first essential, moist earth, the Hydro-Ground has three bowls or cups fastened to a center ground rod. This provides a means for rain water as it seeps through the earth to be caught and restrained within the grounding device itself. This water will remain in these bowls as long as the surrounding earth is moist. When, by reason of the hot sun, evaporation takes place and the earth becomes dry, there still remains for a considerable period, a local moist area due to the water that will be given off by the bowls.

To further aid in attracting and holding the water, charcoal in small pieces within the bowls is furnished with the ground and this is covered by a perforated metal screen. The perforated screen itself is intended to protect the space in the bowls from being filled with the surrounding earth, so that ample water space may be retained.

The second feature, namely, area of contact exposed, is accomplished in the Brach Hydro-Ground from the fact that these three bowls act as a layer of copper and have their upper and lower surfaces exposed toward the earth so that for a given hole, a large area is in contact with the earth.

The third essential of securing firm contact with the earth is said to be provided for in the design as the gage of copper used and the shape of the bowls is so reinforced that the earth may be packed firmly around without bending it or affecting it in any way.

The general construction of this type of ground consists of having the center rod sweated firmly to the three bowls and the rod itself provided with a patented connector, affording easy means of joining a ground wire, and the securing of a reliable connection. The connector has a slot tapering outward and running parallel to the length of the rod at the threaded portion. It is so arranged that when the nut is loosened, a wire may be inserted along the side of the rod and tightened down by the nut, wedging the wire into the slot.

These Hydro-Grounds are now furnished in three standard sizes, each size having three bowls of varying diameters.

Full information may be obtained from the L. S. Brach Supply Co., 143 Liberty St., New York, which manufactures the device.

Kellogg Doubles Capital Stock.

Stockholders of the Kellogg Switchboard & Supply Co., of Chicago, have voted an increase in the authorized stock issue, bringing the total from $1,000,000 to $2,000,000. Later the directors voted a 25 per cent. stock dividend to holders of record January 28, bringing the total amount issued after that date to $1,250,000.

The remaining $750,000 new stock will be retained in the treasury for future requirements, the nature of which is not yet announced by the directors.

The board also declared the regular quarterly dividend of 3 per cent., payable February 3 to stock of record January 31.

Paragraphs.

The Northwestern Electric Equipment Co., St. Paul, Minn., has issued the January number of its "Northwestern Buzzer," the company's house bulletin. This contains 12 pages of good "hot stuff" about the company's products, interspersed with some excellent clipped humor and many illustrations. The continuation of a series of articles on the "N. W. E. E. Co. Service" is given. The series will conclude next month. The "Buzzer" is well worth reading. Get a copy if the house has overlooked you.

The Stromberg-Carlson Telephone Mfg. Co., of Rochester, N. Y., is issuing to the trade short biograpuhical sketches of its salesmen, each accompanied by a portrait of the man himself. The biographies are snappily written. They are printed on a small post card sized card easily handled and quickly read, forming a first class introduction for the salesman everywhere in his territory. All bear the general caption, "Who's Who Among the Telos." "The Telos," it should be known, is an organization of Stromberg-Carlson salesmen.

The Universal Cable Grip Co., of Syracuse, N. Y., has issued its 1913 price list of Universal cable grips. This is in the form of an eight-page folder, which is complete and well illustrated.

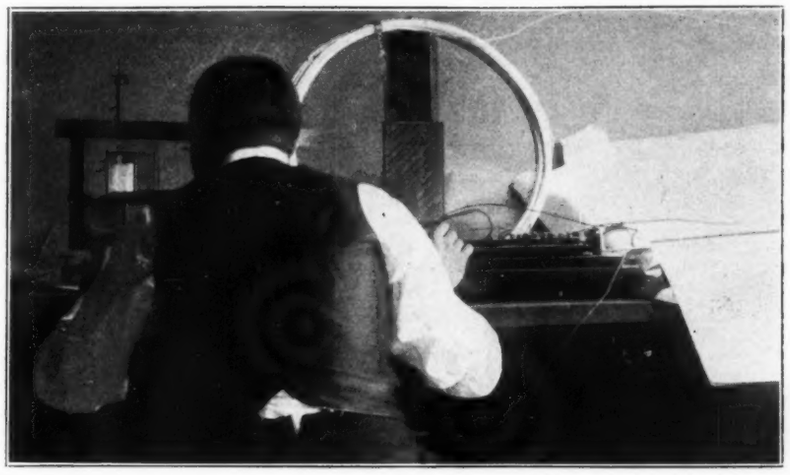


Fig. 1.—Measuring Resistance.

Making Indiana Wire.

A great many people have been customers of the Indiana Steel & Wire Co. for years without any conception of either the size of the Muncie plant or the high efficiency of its operations, says a contemporary. While we cannot hope, within the limits of this brief article, to convey any adequate impressions to those unfamiliar ones, we can at least point out a few interesting features.

Fig. 1 is a view in the testing laboratory of the Muncie plant. It shows an expert measuring the resistance of Indiana wire on a Klein bridge, the most delicate and accurate of resistance measurements. All the company's wire product is so tested, except when the customer indicates a desire to make his own tests.

Fig. 2.—Strength and Elongation Test.

Fig. 2 shows a Riehl machine on which is being tested the strength and elongation of wire in the laboratory. Next to electrical come physical properties, and by this machine the company can determine the use and abuse the wire will stand. The electrical properties can often be obtained by sacrificing the physical properties, but both are almost of equal importance and must be maintained if wire is expected to pass inspection and give satisfactory service.

The torsion test is the most severe test given telephone wire. A piece six inches in length is required to stand fifteen complete twists without breaking. The ends are fastened in a vise-like machine and the twists are registered by a counter.

The company guarantees its wire to stand two or three times the number of twists required. In order to do this the quality and treatment must be absolutely right.

All wire will conduct a current or transmit speech to some extent, and all wire will, in a measure, stand some of the other tests, but where highest degree of efficiency, lowest cost of upkeep and general satisfaction is desired it is best to use the kind of wire which science teaches is best and the kind on which telephones are made to work.

Fig. 3 represents a laboratory test being made by dissolving five ounces of sulphate of copper—blue stone or blue vitriol—in one pint of water. The temperature of the solution should be maintained between 62 and 68 degrees Fahrenheit at all times during the test.

If in addition to efficiency and service one also wants life, one should exert great care in selecting wire. The formula for testing galvanization is so simple, inexpensive and easy it should be freely used. The wire that stands the best test in acid will also last longest in service.

Good telephone wire must stand four one-minute immersions, with the exception of No. 14, the test of which is three and one-half minutes. Immerse the wire one minute, remove and wipe dry, then repeat until this has been done the required number of times when if after wiping the wire shows red the galvanization has been eaten off, but if it continues dark it shows the galvanization to be O. K.

All these tests are scrupulously conducted in the well equipped laboratories of the Indiana Steel & Wire Co., assuring the purchaser of wire a "tried and true" product, which is bound to be satisfactory.

Fig. 4 shows the plant as it actually is, in other words, it is not, like so many "bird's-eye views," a representation of the manufacturers' dream, assisted by the artist's imagination, but a true perspective layout. Small as the picture is, it gives some idea of the magnitude of its subject. Every modern facility for wire making is employed within the walls of these splendid buildings.

A visit to a wire manufacturing plant is an event which will long be remembered. It is extremely interesting to watch the big billets of iron pass through the various operations and emerge as finished wire of varying degrees of fineness. De-

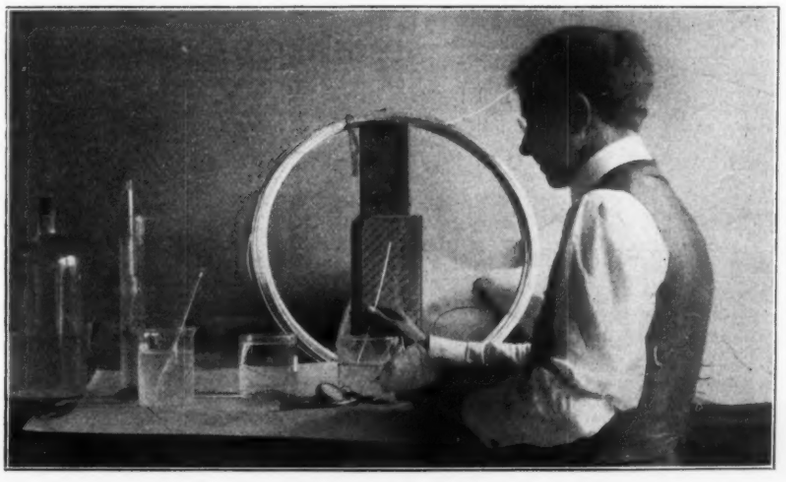


Fig. 3.—Chemical Test of Galvanizing.

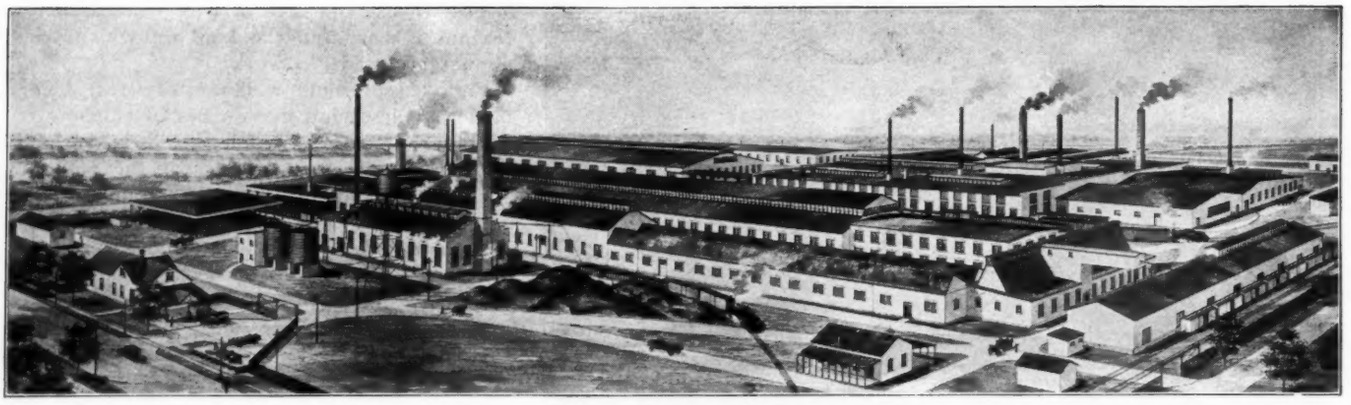
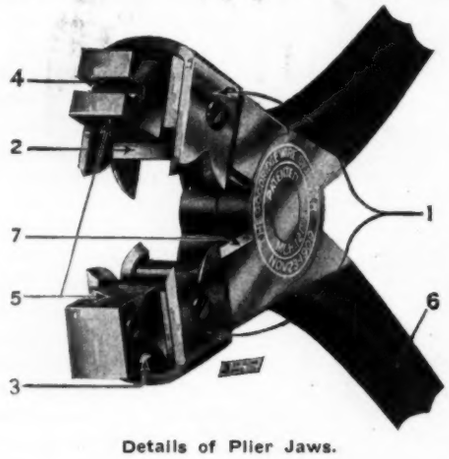


Fig. 4.—Bird's-eye View of Wire Plant of Indiana Steel & Wire Co., at Muncie, Ind.

scriptive literature will be gladly sent upon request.

Goodridge Wire-Skinning Pliers.

Every wireman knows that a large amount of time is consumed in making joints by the necessity of removing the insulation of the wire. The usual jack-knife method



Details of Plier Jaws.

of peeling the insulation is not only tedious, but frequently results in nicked wire, unequal joints, needless waste of tape and occasionally cut fingers. When joints have to be made in wire that is already run in place, and particularly in outlet boxes or other fittings, this labor is not only more wearisome, but usually results. in still greater waste of time and material.

This troublesome feature of wiring work has been practically eliminated by the Goodrich wire-skinning tool and pliers, illustrated herewith. Its use is extremely simple and permits removal of the insulation in about one-tenth of the time. The jaws merely have to be applied and squeezed, producing a neat and clean cut edge to the insulator without any harm to the wire itself.

The construction of the tool is such that the four lateral knives cut the insulation square across and another knife at the same time splits the insulation longitudinally so that it can be readily pulled off by the roughened square jaws. This is shown by one of the illustrations herewith in which *1* indicates two of the knives for cutting the insulation, *2* the splitting knife, *3* a knife for scraping the wire, *4* slots for bending loops in the wire ends, *5* jaws for pulling off the insulation, *6* the tool handles which are of the same length as for standard eight-inch side-cutting pliers, and *7* a pair of side-cutting jaws. The entire tool is 7.75 in. in total length, and is now made only for use with No. 14 wire, since this size of wire constitutes about 90 per cent. of the interior wire used.

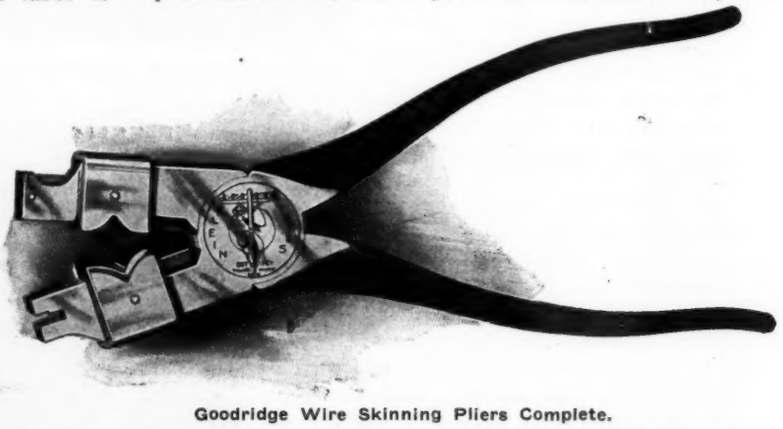
How the Pliers Are Used.

The Goodrich wire-skinning pliers are manufactured and sold by Mathias Klein & Sons, Chicago.

Oh, You Peanut Ham!

From the land of fried chicken supreme and corn pone and "you-all," "Bill" Mayo drifted into Buffalo not long since. "Bill" is fair, fat and forty (maybe). Anyhow, he's fat and good-natured, and a "laugh goes with every breath."

Bill hangs out in Richmond, Va., that good old town of good old families and of memories and history as ancient as our fair land. Bill isn't ancient however. He's right up to the minute, and maybe that's one reason why he's



Goodridge Wire Skinning Pliers Complete.

boosting Ericsson top-notch telephones to "you all"—if you happen to be one of the lucky dogs who is taking money from the dear people for running a telephone exchange in Virginia or North or South Carolina.

Bill's firm name (when he's home in the harness) is Tower-Binford Electric & Manufacturing Co. Long and

impressive, isn't it? But not half so impressive as Bill's enthusiasm when he's talking about Ericsson steel telephones—the last-forever ones. Actually, he says there's

The Tower-Binford Company's Building.

only one thing the people in his section think more of—and that's chicken, of course.

Automanual Trust Certificate.

The installation of Automanual switchboards at Ashtabula, Ohio; at Warren, Ohio; at Conneaut, Ohio; at Galesburg, Ill., and Greensburg, Ind., all of which are now operating successfully, has demonstrated, says the Telephone Improvement Co., that the Automanual system is to be the telephone switching system of the future, and that such system will supply a grade of service to subscribers which cannot be equalled by the so-called manual, or by the automatic system, and has also demonstrated that it is practicable to reduce very greatly the operating cost of telephone service.

In addition to its operating efficiency and economy, the Automanual system supplies the demand for multi-office exchanges in large telephone centers without the expense and confusion of B operators, and involves a plant construction *economy* which is from 30 to 70 per cent. greater than any other form of construction. The depreciation factor chargeable to the Automanual system is so slight that conservative engineers estimate the life of the system to be at least 25 years.

An investigation of these claims may be readily accomplished, and if such demonstration results in satisfaction the only questions remaining are questions of engineering and financing.

The company has, in its engineering department, competent engineers who will be glad to assist in re-equipment engineering of any operating company desiring to adapt this process to its service.

It is realized that Independent telephone securities are, as a rule, not readily negotiated away from home. The market for such securities is, generally speaking, largely local. There have been failures, most of which have been due to early promotion evils. But, in most cases, the Independent plant has a sufficient value to protect its preferred stockholders and the holders of its bonds, and if such company can be given proper financial assistance to enable it to take advantage of the economies which are available, its securities would become thoroughly sound and satisfactory for investment anywhere.

A public service corporation which fails to meet the demands of the public is usually regarded as a nuisance. A telephone plant which is unable to give satisfactory service to its subscribers is no exception to the rule. There can be no excuse for the existence of such telephone company unless it be maintained for the sole purpose of preventing excessive charges by a Bell company, which would otherwise have a complete monopoly. For these reasons, it is apparent, the manufacturers state, that replacement with Automanual must, in the majority of cases, be financed with the assistance of outsiders. In order to interest outsiders, the "Automanual Telephone Equipment Trust Certificates" have been devised.

In an operating manual exchange handling 100,000 calls per day, the operating expenses in salaries alone will average $1 per thousand calls. The Automanual system will handle 100,000 calls per day at an expense not exceeding 20 cents per thousand calls. The result is a net saving of $80 per day, or an annual saving of more than $25,000 a year.

It is proposed by The Telephone Improvement Company, Chicago, the selling company for the Automanual, therefore, to contract with any operating company desiring to purchase Automanual equipment to deliver and install the system on a cash payment of 25 per cent. of the contract price. The balance of the purchase price will be represented by Telephone Equipment Trust Certificates bearing 6 per cent. interest covering a period of seven years, 1/84 part of which balance shall become due each month. It is believed that the savings alone will be sufficient to meet such monthly payments. Upon the payment of the eighty-fourth certificate the title to the apparatus will pass to the operating company.

Arrangements have been made to dispose of the telephone equipment trust obligations and thereby enable operating companies which need new central office equipment to acquire such equipment without serious embarrassment to either party.

Special Telephone Board for Telegraph Company.

The Western Union Telegraph Co. has installed at Albany, N. Y., a switchboard which accommodates six operators, enabling any operator to pick up and handle any incoming call on any one of the seven trunk lines terminating in the board.

On both sides of each of these there are spaces for typewriters, so that the operators may take incoming telegrams directly on the machine.

TO INDEPENDENT AND BELL COMPANIES.

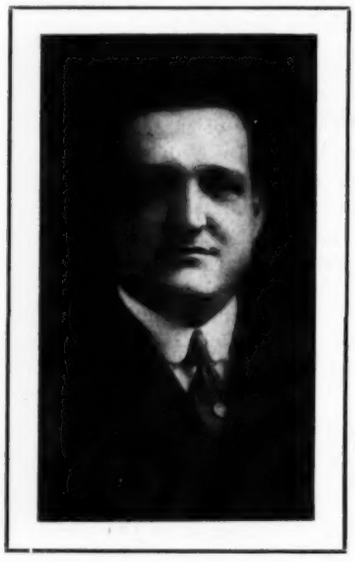
In connection with the information we are now gathering for the forthcoming edition of TELEPHONY'S Directory of the Telephone Industry, we are compiling certain additional and unusual statistics. To the end that this data may be comprehensive and as complete as possible, we ask every telephone company to mail us a copy of its latest directory. We trust all will respond promptly, and assure each that the courtesy will be appreciated. Please address it to TELEPHONY, Monadnock Block, Chicago.

Condensed News Reports

Officers of Companies are Earnestly Requested to Forward Us Promptly All Financial and Other Statements as Soon as Issued, and Any Items of Interest as to Their Plants and Systems

Personal.

JOHN L. PUTNAM, district commercial manager of the Central Union Telephone Co. for the past twelve years, has resigned to associate himself with Kennett Cowan & Co., bankers, of New York and Chicago, as bond salesman. Mr. Putnam has been connected with the telephone business since 1896, when he went with the American Telephone & Telegraph Co., as inspector, at Chicago. He remained with the parent organization three years, leaving to become general manager of the Clark Automatic Telephone Mfg. Co., at Providence, R. I. He was with this company from 1899 to 1904, when he joined the staff of the Central Union.



John L. Putnam.

Mr. Putnam's headquarters were at Indianapolis, and, during his residence there, he became one of the best known telephone men in the field, as well as one of the best informed. He has scores and hundreds of friends in the territory who will deeply regret his decision to quit the business, but who will join with TELEPHONY in wishing him every success in his new line.

Mr. Putnam was born in Houlton, Maine, June 17, 1874. He is a graduate of the Massachusetts Institute of Technology, class of '96, in the electrical engineering course, obtaining the degree of S. B. He is a Delta Tau Delta and a member of the Indiana Club, South Bend, Ind.

J. P. TUTT has resigned his position as manager of the Iowa Telephone Co.

JOHN BERTWELL has resigned his position as manager of the Nebraska Telephone Co., at Yutan.

O. A. WELLS has been appointed local and district manager of the Michigan State Telephone Co., at Pontiac, Mich.

E. S. WELCH, of Mayville, Ky., has been appointed superintendent of equipment of the Interstate Telephone Co., at Aurora.

C. M. HARDING has been appointed commercial manager of the Iowa Telephone Co., at Des Moines, to succeed J. P. Tutt, resigned.

C. A. JONES has resigned his position as manager of the exchange of the Southwestern Telegraph & Telephone Co., at Yoakum, Texas.

GEORGE W. LEWIS has been elected a member of the directorate of the Cincinnati & Suburban Bell Telephone Co. to succeed the late Briggs C. Cunningham.

J. WALLACE CHERRY, manager of the Sandusky, Ohio, plant of the Central Union Telephone Co., has been promoted to the position of plant superintendent for Ohio.

JAMES COSGROVE has resigned his position as manager of the Northern Antelope Telephone Co., at Neligh, Pa. He will be succeeded by Harley Bishop, of Brunswick.

G. J. JOHNSON has resigned his position as manager of the properties of the Central Telephone & Telegraph Co., at Paxton, Ill. He is succeeded by T. D. Thompson.

J. H. LONGSTREET, who, for some years past, has been the manager of the Union Telephone Co., at New Castle, Pa., has been transferred to the Sharon, Pa., district, as manager.

D. G. FAST has resigned his position as manager of the North Star Telephone Co., at Mountain Lake, Minn. He will leave shortly for Montana to engage in the land business.

L. L. LEISHER, formerly with the Missouri & Kansas Telephone Co., at Kansas City, Mo., has been appointed equipment engineer of the same company, with headquarters at Wichita.

J. B. CLARK, formerly manager of the Abbeville, La., exchange of the Cumberland Telephone & Telegraph Co., has been transferred to Morgan City, La., succeeding W. I. Bateman.

STEPHEN STRADFORD has been appointed manager of the local exchange of the Michigan State Telephone Co., at Holland, Mich., succeeding H. E. Lampman, recently transferred to Charlotte.

PHILLIP GRAHAM has resigned from the directorate of the Citizens' Telephone Co., of Grand Rapids, Mich. Charles E. Tarte, general manager of the company, has been elected to fill the vacancy.

HENRY H. EVANS, one of the promoters and first president of the Inter-State Independent Telephone & Telegraph Co., at Aurora, Ill., and his son, Arthur Evans, have resigned as directors of the company.

H. C. SHEARER, for sometime plant superintendent of Ohio for the Central Union Telephone Co., has been appointed special agent to E. A. Reed, general manager of the company, with headquarters at Columbus, Ohio.

C. G. BAIRD, formerly manager of telegraphs and telephones for the Pennsylvania Railroad, in New York City, has been promoted to the position of division operator, of the Manhattan Division, with headquarters in the new Pennsylvania station.

A. D. JOHNSON, district manager of the suburban exchange of the Cumberland Telephone & Telegraph Co., at New Orleans, La., will be transferred to Vicksburg, Miss. Mr. Johnson will be succeeded by J. C. Hay, manager of the Vicksburg exchange.

W. F. McKEE, manager of the Independent Telephone Co., and of the Montana Telephone Co., Great Falls, Mont., for the last two years, has been promoted to the position of special representative of the Independent Telephone Co. for the state of Montana.

S. P. GRACE, formerly plant superintendent of the Central District Printing & Telegraph Co., at Pittsburgh, has been transferred to Philadelphia as engineer of outside plant for the Bell Telephone and associated companies. He is succeeded at Pittsburgh by Burdette Stryker, of Reading, Pa.

H. W. SEXTON has been transferred from the management of the exchange of the Bell telephone company, at Pittsburg, Kan., to that of the exchange at Leavenworth, Kan. He will be succeeded by P. V. Jordan, former manager of the traffic department of the Bell company office in Joplin, Mo.

JOHN P. BOYLAN has been appointed manager of the Mountain Home Telephone Co., at Plattsburgh, N. Y. Mr. Boylan was formerly manager of the Doan exchange of the Cleveland Telephone Co., and afterwards superintendent of service for the Cuyahoga Telephone Co., at Cleveland.

J. S. GILLENTINE, who has been district manager of the Cumberland Telephone & Telegraph Co., at Jackson, Miss., for several years, has been appointed district superintendent. A. M. Dean has been promoted from the position of plant chief to that of district superintendent of plant. George W. Drummond has been appointed district superintendent of traffic.

CHAS. F. BRYAN has resigned his position as general commercial superintendent of the Chesapeake & Potomac Telephone Co. of Baltimore, Md., because of ill health. Mr. Bryan is a son of the late Samuel M. Bryan, who was president of the Chesapeake & Potomac Telephone Co., in 1885. His successor is S. M. Greer, assistant commercial superintendent of the New York Telephone Co.

WILLIAM W. DEAN, of the Dean Auto Devices Co., Chicago, the well known telephone engineer, formerly president of the Dean Electric Co., is wearing a smile broader than usual of late. The reason is that he has a new partner, who will be christened William W. Dean, Jr., and who is expected to develop the faculty for invention that has made his proud father prominent in the telephone field. Dean, Jr., arrived January 20.